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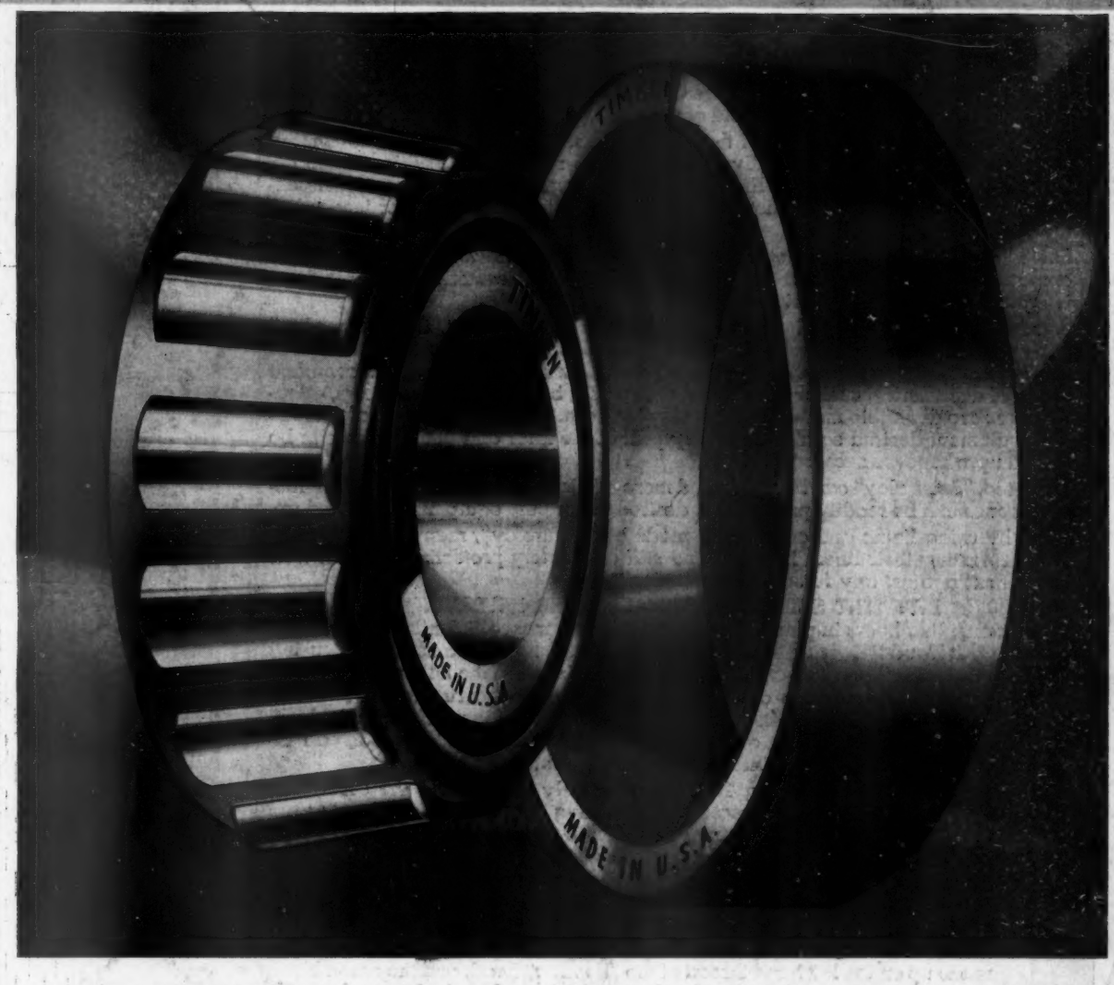

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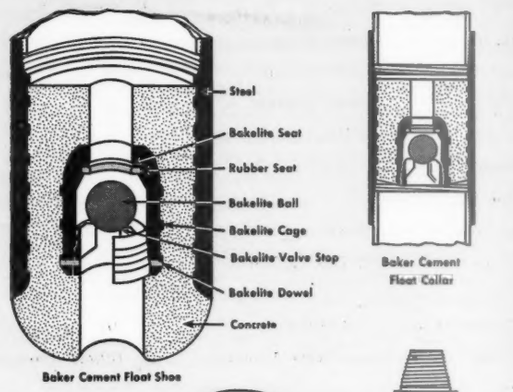
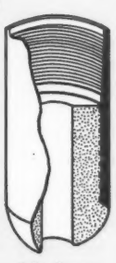
Peace of Mind

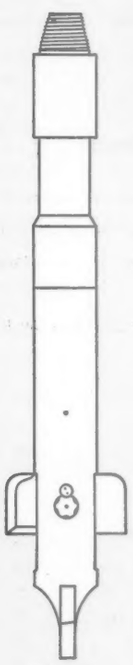


Baker Cement Float Shoe

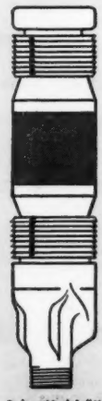
Baker Cement Float Collar

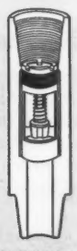
Baker Cement Whirler Float Collar with Solid Bottom Baffle, with Metal "Petal" Basket

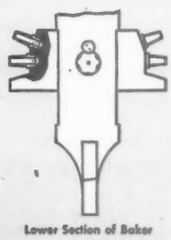

Baker Cement Guide Casing Shoe


Baker Rotary Wall Scraper

Baker Cement Wash-Down Whirler Float Shoe


Baker Model "K" Cement Retainer


Baker Bakwik Model "B" Drill Pipe Float


Lower Section of Baker Rotary Wall Sampler

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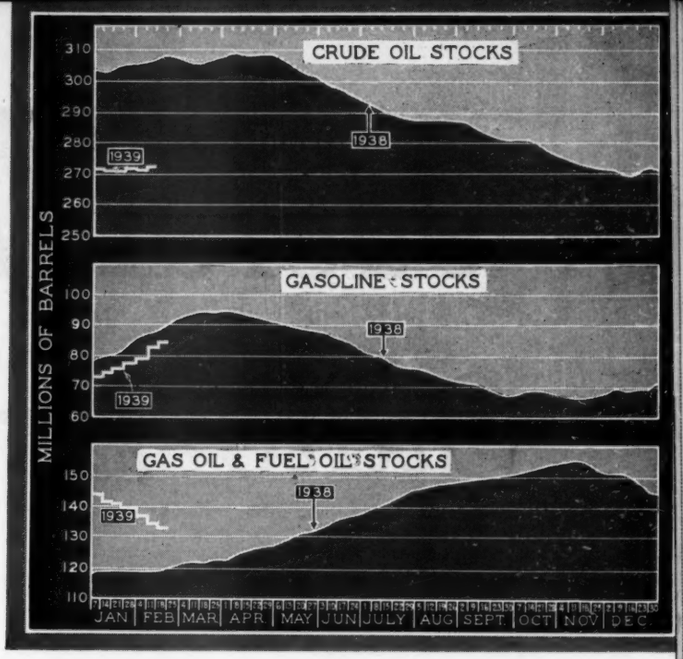
Trends

Government Estimate of Demand for March Points to Good Month


CRUDE OIL STOCKS
GASOLINE STOCKS
GAS OIL & FUEL OIL STOCKS
MILLIONS OF BARRELS
1938
1939
JAN FEB MAR APR MAY JUN JULY AUG SEPT OCT NOV DEC

THE Bureau of Mines operating recommendation for the new month which started Wednesday points to a favorable situation not only for March but over the remainder of the year so far as the consumption of petroleum products is concerned. Experience has shown that the first quarter of a year usually gives an accurate gauge on demand trends over the entire year, and there does not appear to be any reason why this year should be an exception.

CRUDE PRODUCTION *3,333,122 barrels daily average — up 12,161. One year ago 3,325,447 barrels.*

CRUDE STOCKS *272,052,000 barrels as of February 18—up 499,000. One year ago 305,219,000 barrels.*

GASOLINE STOCKS *84,597,000 barrels as of February 25—up 1,522,000. One year ago 95,594,000 barrels*

GAS AND FUEL OIL STOCKS *133,671,000 barrels as of February 25—down 1,425,000. One year ago 121,123,000 barrels.*

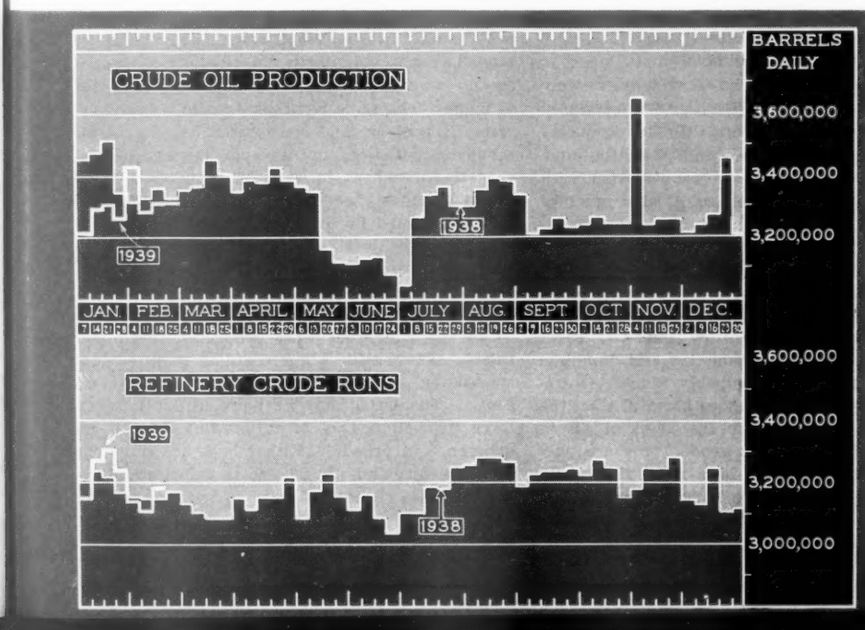
REFINERY RUNS *3,185,000 barrels daily week ending February 25 — up 60,000. One year ago 3,149,000 barrels.*

While final data are not available, weekly reports covering crude oil production, runs to stills and changes in inventories during January and February clearly indicated that actual consumption of the important refinery products was in excess of expectations, with substantial gains over the first two months of 1938. The bureau's March projection, announced last week, recognizes this development by pointing out that "a sharp upward trend is shown in gasoline demand over the past three months" compared with corresponding months of previous years.

With this situation in mind, the government report estimates March motor fuel demand will be 4 per cent greater than in March last year, with increases in both domestic and export requirements. It predicts that crude requirements will be 120,000 bbls. higher daily than they were in February and slightly greater than in March last year. While these demand data are highly favorable, unfortunately they do not afford a basis for optimism regarding market trends this month. The bureau, recognizing that gasoline stocks have been increasing too rapidly in recent weeks recommends that crude runs to stills be restricted to the point where there will be no further increases in inventories over the next 31 days.

Similar conditions prevail in crude production. National output last week was practically the same as the recommended average production for March, so the 120,000-bbl. increase in demand should not be reflected in a similar production gain this month. Arkansas, Louisiana and New Mexico are increasing their state allowables this month, and Illinois, which established a new peak last week, is certain to expand its production through March. Oklahoma will continue its February allowable, as will Texas, at least through the first half of the month. California will attempt to keep its March production under the February level.

There were no general changes the past week in refinery markets. Gasolines are fairly steady in most areas despite the large additions to stocks over the past month. Fuels are weak in California and the Gulf Coast. Pennsylvania Grade lubricants are advancing. Natural gasolines in the Mid-Continent have displayed unexpected strength recently and quotations are firm.



DAILY AVERAGE PRODUCTION FOR WEEK

	Feb. 25, 1939	Bur. Mines Feb. est. of demand	Feb. state allowables	Feb. 18, 1939
Oklahoma City	114,050	.....	.....	111,425
Fitts	30,575	.....	.....	31,250
Remainder of state	305,200	.....	.....	301,800
Total Oklahoma	449,825	482,500	428,000	444,475
East Texas	372,547	.....	.....	372,397
West Texas	207,748	.....	.....	206,348
North Central Texas	110,248	.....	.....	110,000
Texas Panhandle	64,252	.....	.....	60,446
East Central Texas	94,000	.....	.....	91,805
Gulf Coast Texas	357,098	.....	.....	356,948
Southwest Texas	105,800	.....	.....	106,345
Total Texas	1,311,693	1,297,500	1,319,542	1,304,289
North Louisiana	71,055	.....	.....	69,280
Gulf Coast Louisiana	195,850	.....	.....	195,350
Total Louisiana	266,905	246,800	255,140	264,630
California	623,500	580,000	610,000	634,200
Kansas	150,700	148,600	153,900	152,425
Arkansas	53,395	48,200	.....	53,325
Eastern Fields	96,200	94,300	.....	94,800
Illinois	155,408	102,500	.....	149,816
Michigan	54,846	47,200	.....	53,971
New Mexico	104,370	99,600	99,600	104,370
Rocky Mountain area	66,280	72,800	.....	64,660
Total United States	3,333,122	3,220,000	.....	3,320,961

Federal Law Needed State Proration, Says

By AMOS L. BEATY

Col. E. O. Thompson, of the Texas Railroad Commission has come out in opposition to market-demand proration. He would do away with all regulation of the oil industry, except only the prevention of physical waste. On two recent occasions he has made this clear, and there is no room for construction in his remarks. If they are for consumption in states other than Texas, may they have the desired effect. But too much can not be taken for granted, and the situation which called forth the remarks may as well be faced with open eyes, and at once. If the present underground inventories of the industry are to be liquidated without market-demand proration the sooner we know it the better.

The commissioner evidently rejects the theory that restriction of production to market demand averts physical waste such as evaporation and fire loss resulting from storage aboveground. His remarks are meaningless on any other hypothesis. An intention broadly to condemn market-demand as a proration factor is unmistakable.

If there are two kinds of proration, one to prevent physical waste, and another to accomplish an economic purpose, it may not be inappropriate to examine them closely and study their relationship, if any, to each other. A look at the origin, purpose and development of proration in general may be helpful. We can start with the simple inquiry: What is it? And this brings out the fact that in strict analysis proration is a secondary thing. It follows curtailment of production as an incident and is the antithesis of preference and partiality.

However, the entire process of curtailment and proration is generally referred to as proration. Historically, it was adopted when the potential of wells exceeded the quantity of oil that could be marketed. When new fields were brought in, and numerous wells were drilled, and these wells produced in large volume, and the pipe line or other transportation facilities were limited, or those who purchased did not need all of the oil, proration became imperative in fairness. There were times when companies owning pipe lines, or producers enjoying special favors, were inconsiderate of their neighbors. Not only did they take the market; they drained adjoining properties and thus took oil to which they had no moral right. Not all companies were guilty of these wrongs. Many displayed good sportsmanship and some were willing to prorate voluntarily. But, just as in the case of producers, who, faced with rules set for ratable production, proceeded in defiance of those rules to produce all they could, the offenses were numerous enough and serious enough to invite legislation. There was not enough unanimity in the desire to be fair. Statutes of some kind were inevitable.

The first moves were fumbling and ineffective. Pipe lines were declared common carriers. That meant little, as producers desired to sell their oil at the well. Then the innovation of a common purchaser law was tried, with more but not complete success. At this juncture it was noticed that producers who had large potentials and inadequate outlets, spurred on by the law of capture, would bring oil to the surface and place it in cheap and wasteful earthen storage. Also, with major pool development and no quantitative limit on production, the industry could be thrown into chaos by excessive production and dumping, even though no oil was palpably wasted. Operators considered the latter more harmful than the former; they could endure the sight of oil in open ponds if prices were good. What are now known as market-demand laws were finally enacted in some of the states, including Texas, and statewide proration ensued.

In this evolution or development of the last 30 years, step by step, the underlying idea of proration has remained unshaken, and there are in the industry today few who are opposed to it. Probably no one will admit that he is opposed to ratable taking. The lingering critics prefer to challenge the restriction of production where there is no serious physical waste. Their theory is that it would be better to allow production to swell out of bounds; that this would result in lower prices, which in turn would slow down exploration and decrease the supply, and that a normal balance would ultimately prevail. From the selfish standpoint of large integrated companies, with empty storage and plenty of cash, that argument may be sound; they can fill their tanks when prices are low and empty them when prices are high.

At one time that was a favorite way of making profits. But it oppresses the independent producer. Peaks and valleys are objectionable to him. He prefers stability. And there is more involved than the welfare of the producer; the public has an interest. It is interested in the conservation of oil. It is interested in the maximum recovery being obtained. It is opposed to a system which, through wide fluctuations and recurring periods of low prices, renders the operation of stripper wells unprofitable and causes their premature abandonment. An important part of our proven reserves is in stripper well areas where the cost of wells is already expended and new drilling would not be warranted. Abandonment of such areas would mean permanent loss of the oil. So by mixing in a little economics the states have still further prevented waste.

As already indicated, proration had its genesis in the apportionment of market-demand and not in the prevention of waste. The physical waste aspect was thought of later to sustain it. Indeed it was at first contended by some that pinching wells caused waste. When the Crichton pool in Louisiana was voluntarily prorated 20 odd years ago no one was thinking of waste, except a waste of money. The same has been true in subsequent cases. A pool or field is prorated because of an economic situation, not enough market for all the oil. In such cases common sense as well as common honesty demands proration. Production being restricted in volume to the market outlets each producer is allowed his just share. And in the simple case of local proration, involving only a pool or field, the plan has been very successful. No one has seemed to think it was valorization.

In the course of time production here and there reached such proportions as to affect entire states, and statewide proration became essential. The latter may be more difficult to enforce than single-pool proration, but there is no difference in principle. Either both are sound or both are unsound. If the one is valorization the other is also. True, a state may not successfully

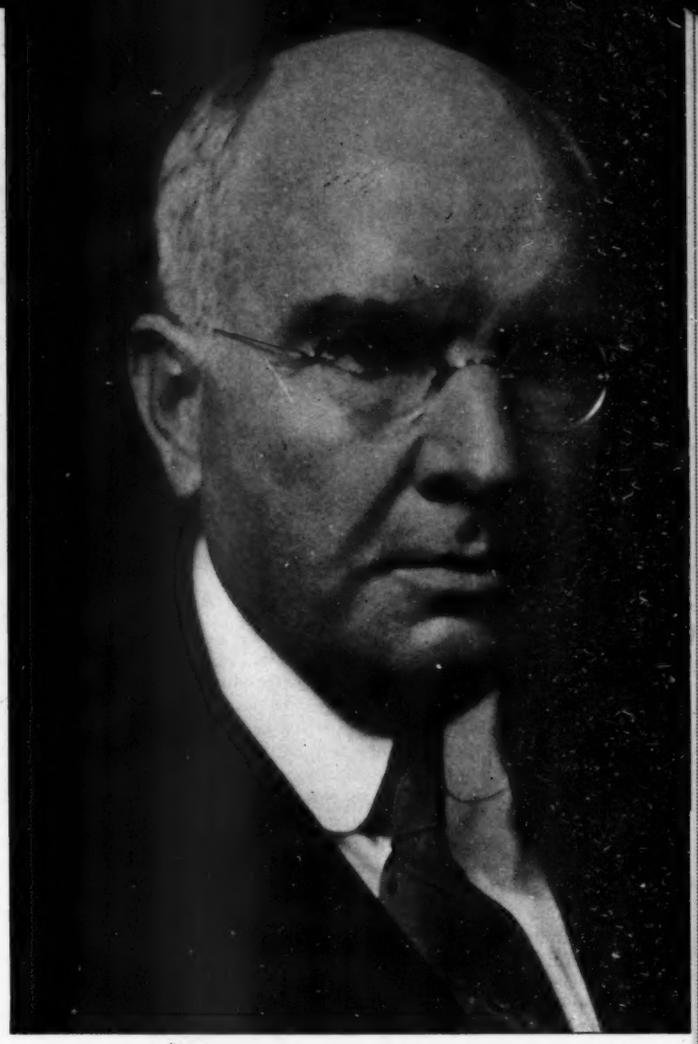
IN RECENT weeks The Oil and Gas Journal has published a number of representative views of leaders of the industry. While the opinions expressed in some cases have varied widely it is felt that each has been a contribution looking toward a solution of the several problems with which the industry is now confronted.

The two statements this week are by Judge A. L. Beaty, New York attorney and operator, and Elliott Roosevelt, second son of the president.

Judge Beaty as a young man was a district judge in Texas. He became counsel for the Texas Co. and later its president and executive head. He served as president of the American Petroleum Institute and was active in the N.R.A. oil administration.

Mr. Roosevelt has been a radio executive for several years, with headquarters in Fort Worth. He has frequently criticized some of the activities of the national administration, contending they were retarding rather than aiding business recovery. The statement on page 32 was broadcast on February 25 by Mr. Roosevelt over a Texas network which he heads.

to Aid Beaty



AMOS L. BEATY

conduct a merchandising business or run a corner in commodities. But statewide proration is nothing of that kind; it is simply the enlarged picture of a prorated oil pool.

Valorization

The objections to valorization do not apply because petroleum is a wasting resource which does not reproduce itself and is not reproduced by cultivation or the energy of man, and therefore the available supply may properly be treated as irreplaceable stocks which in true economy should be conserved. They are inapplicable also because it happens that, coincidentally with curtailment and proration as an economic measure, some physical waste is prevented, almost invariably, and correlative rights are protected.

Only some of the oil-producing states have these market-demand laws. Others have proration laws of a kind. Still others, having none whatever, hold themselves as free as the wind. There is no vital or effective coordination of the states. And here we come upon the real trouble in full view and complete exposure. Here we have the real reason why the system is trembling in the balance. When the commissioner says that "Texas today has 53 per cent of the reserves and is producing 38 per cent of the market" he makes us understand why he has grown cold on market-demand proration. Evidently he has found hopeless the compact plan and is unwilling longer to back, and back, and back. The writer, for one, hopes so and is willing to agree that, if there is to be no effective coordination of the states, the present concessions made in Texas should be adjourned.

It stands to reason that coordination of states can not proceed upon a milk-and-cider basis. Everyone hoped that the compact plan would work. If some hats were not thrown up it was because there were too many doubts and no desire to appear silly. The compact is now a failure. Some states are unwilling to come in. Some that are in are being imposed upon. There are no laws under which any single decision of the compact authority could be enforced. In this weakness there is said to be strength. Let the paradox pass; there is no strength. If there really were strength the defeatist attitude would not exist. If there really were strength Texas would be getting her share of the market.

The final truth of the matter is that proration, having grown from a single pool institution to something national in scope and necessity, must be viewed in that light. We have national or plural-state proration with no national or plural-state law on the subject. In this industry, where the law of capture plays so large a part, altruists are not numerous. Simple proration for single pools was never a success until there was law for it. We may abhor laws, and yet some are necessary. The states that have laws for market-demand proration, if they severally stood alone, each with a definite market, could and doubtless would accomplish much. As it is, they can go the full limit of those laws and still find their efforts fruitless. This is because other states are like the operator in a pool who insists that proration is not for him. But it is said that they are sovereign states. What of it? The sovereign state, no more than a rugged individualist, should stand in the way of progress.

Congress has power under the commerce clause of the Constitution to deal with this subject effectively. One can not imagine a better case for national intervention. The administrative machinery would be simple and could be limited almost to the present Bureau of Mines. The act itself should expressly provide against federal interference in any state so long as the state's production does not exceed its ascertained portion of the national market demand, and the apportionment could be based upon proven reserves. The federal agency, if called into action, would function in the states, not directly to control production, but to limit and apportion quantities of oil moving in interstate commerce, which as a practical matter in the end would control production.

Such a law would afford the authority, the alternative authority, under which things could be done. Probably no exercise of such authority would ever be necessary. States are extremely jealous of their own authority and would go far to render federal intervention unnecessary. In any event the present gross inequities as between states would cease.

State Rights

But the suggestion of a federal law immediately arouses resentment, anger and hate. The state rights bugle blares and the Civil War must be fought again. This federal phobia is a peculiar malady, for which no clinic seems possible. Reason says that when the states find themselves helpless in a situation it is the duty, and not merely the privilege, of the federal Government to come in and help. Our forefathers saw that in many matters the states would need federal assistance, and this was specially true of commerce. As shown by the decisions of the Supreme Court, the propriety, yea necessity, of congressional action has increased in instances as the country has developed.

In our case the structure in which we are trying to live is incomplete; it has no top. We have walls, some standing while others are swinging, but they are not tied together by a roof. How on earth did anyone ever expect plural state proration or an interstate compact to succeed when each state is free to follow its own sweet will and, moreover, is urged on by producers who are its citizens and by the ever-pressing need of tax money? It required a very bright type of optimism. And this does not imply criticism of those engaged in the effort. It is the plan that was weak.

The present problem was before the industry in grave form in 1933, as it had been before and has been since. In that year the industry came near reaching unanimous accord as to what should be done. Reference can be made to the action of the American Petroleum Institute at Chicago in November 1933 and to various votes and proceedings of the Planning and Coordination Committee under the Petroleum Code in 1933 and 1934. In fact an accord was reached by real and genuine majority action to support the type of legislation advocated in this paper, and it was broken late in 1934 by federal phobia, which substituted the interstate compact scheme. And here we are today.

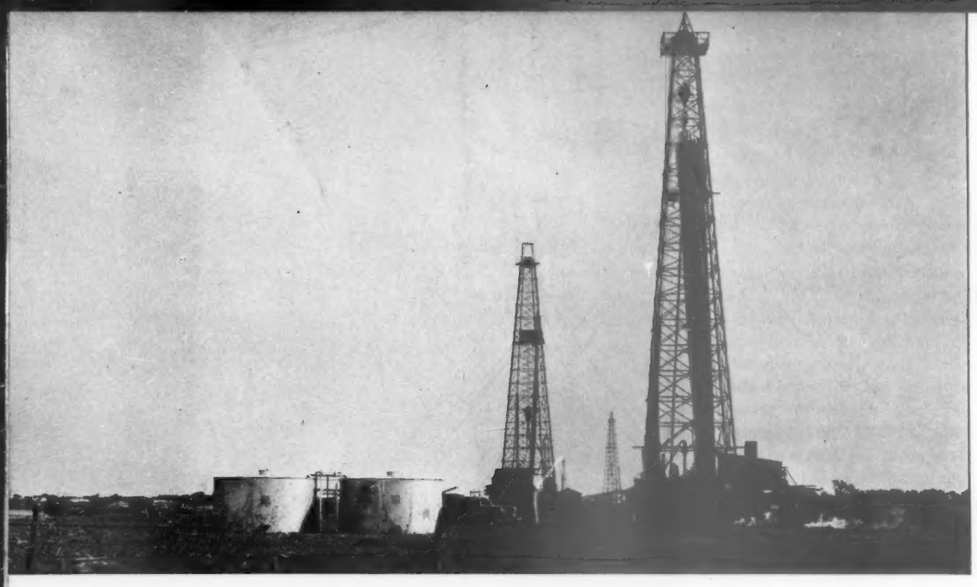
Bureaucracy is anathema to everyone and yet a little of it is essential. Strange to say, it is found in objectionabe quantities in state governments as well as federal. Men in office are made from the same source clay. The average in honesty and efficiency is probably as high in the federal service as it is in the states. The citizen is often irritated by red tape in both places, but he must remember that some of this is necessary. Some one must carry on and do the things that have to be done, and if they are done in an inefficient or overbearing manner it can be charged to the lack of perfection in human institutions.

Certainly the danger of mistreatment is not so great or serious as to warrant the abandonment of all hope or a refusal to ask the help of government when there is an essential task which government alone can perform.

A little reflection will show how childish and unfair we are at times. Instead of inveighing against federal bureaucracy we might occasionally stop long enough to take pride in some agencies which, through administrations we like and those

(Continued on Page 32)

Drilling Aransas



Scattered rigs in Aransas Pass extension area

By NEIL WILLIAMS

CORPUS CHRISTI, Tex., Feb. 27. Inspired by continued extensions of production with development now reaching into the townsite of Aransas Pass, drilling activity in the McCampbell field, Aransas and San Patricio counties, Texas Gulf Coast, is assuming boom proportions. Already more than 25 rigs, exclusive of workovers, are running, and additional strings of tools are being moved in from other fields as available. More work is going on in this field than in any other place in South Texas or South Louisiana.

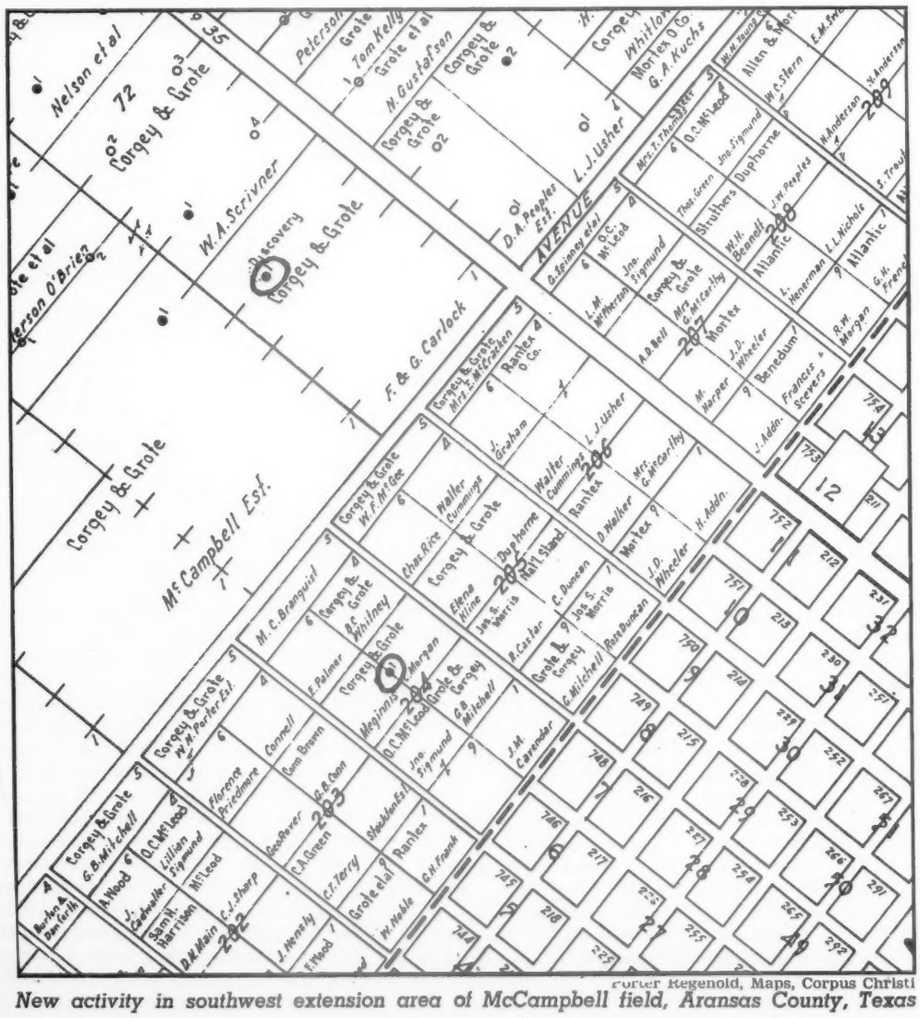
Activity now is being directed to drilling up numerous small tracts bordering the western and northeastern limits of the Aransas Pass townsite, along which the trend of play is following. Exclusive of potential development within the townsite proper, remaining undrilled tracts, outside the townsite and within productive limits, forestall any early playing-out of activity. With productive limits still undefined on the sides of the townsite, or in advance of the trend southward beyond the townsite, no predictions can be made of the extent of drilling.

In the path of development, both eastward and southward into the townsite and southward beyond and to the far side of the townsite, lie only numerous small tracts. Although 10-acre spacing is being followed wherever possible, numerous fee ownerships are forcing drilling up of the tracts in competitive offsetting, preventing delayed development.

So far production has not been extended into the townsite proper, and only the first test has been started, but launching the awaited townsite drilling play was brought a step closer the past week with completion by R. B. Bryant of their No. 1 Morgan and McGinnis, Block 204, which brought production within a quarter mile of the west limits of the townsite. This well, which is marked on the accompanying map as Corgey & Grote No. 1 Morgan-Meginnis, had not been given a production test at this writing but it is estimated to have flowed 525 bbls. through three-sixteenths inch choke in 24 hours from pay at 7,121-41 feet. Offsetting around this well will bring general development into the townsite. Production now is just outside the townsite on two opposite sides, placing the townsite directly in the trend of play.

Townsite drilling will create still more intensive development and materially boost the number of rigs running. Spacing regulations have been instigated by the city as well as the Railroad Commission to restrict the number of wells, but rapid development is anticipated. Under drilling restrictions imposed, the townsite has been divided into units, usually consisting of two city blocks each. None of these units is over 10 acres, the majority running 7 to 8 acres.

Within the townsite are 201 of these drilling units, taking in the entire townsite area. Although there is no way of determining at this time how many of these units will come within the development, it is safe to predict a substantial number will be drilled. Already permits have been taken out for drilling on about 75 of these units principally along the west side.



New activity in southwest extension area of McCampbell field, Aransas County, Texas

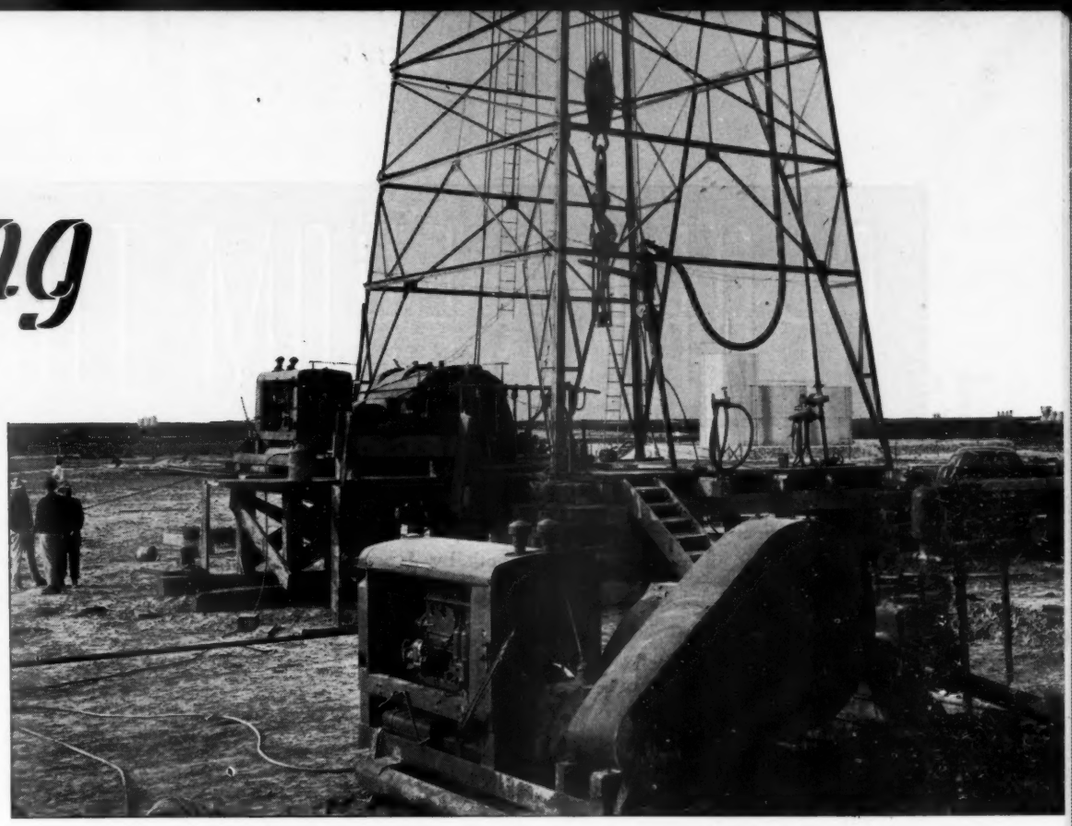
Porter Reynold, Maps, Corpus Christi

This play is being carried on largely by independent operators who now have practically all the prospective acreage fairly well tied up. Except in the older part of the field, where Atlantic Refining Co. is the predominating operator and leaseholder, the larger companies have practically no holdings. Also of significance is the large number of different operators, which is unusual on the Gulf Coast. Leading in number of operations, as well as in acreage holdings, are A. D. Corgey and Frank Grote, of Corpus Christi, operating jointly.

In addition several rigs were running in the older portions of the field and at unlisted outpost locations.

The play got its start last October following completion of Corgey & Grote No. 1 Carlock, Block 72, which extended production more than 1½ miles southward into the small tract area bordering the townsite of Aransas about three-quarters of a mile northwest of the town-

Nearing Pass



Light work-over rig in original part of McCampbell field

site. For several months prior to that, with slackening of work in the old field, drilling had been limited to three or four rigs. Since, with proving of intervening acreage from the extension well to the old field and with spread of development over the small tract area, the number of active rigs has been increasing rapidly. By January 1 15 rigs were running in the new area, with 10 more being brought in since.

Development in the new extension townsite area is in the 7,100-foot sand from which main production of the old field is obtained. Apparently there is a better section of this sand in the new area with some wells reported having as much as 30 to 35 feet. The saturated section taken in, however, usually runs less than 10 feet. In the older area wells were completed in as little as 18 inches of sand.

Active operations in the new area as of February 20 were:

Operator—	No. of operations
Corgey & Grote	8
Walter Brauer and others	1
Richardson Petroleum Co.	3
James P. Nash	1
Arthur Davidor	1
Nueces Royalty Co.	1
Buckner Oil Co.	2
Tom Graham	2
Antex Oil Co.	1
George E. Smith	1
Shasta Oil Co.	1
SEW Oil Co.	1
Abbott & Traxler	1
Mortex Oil Co.	1
Pat Rutherford	1
Total	26

Due to the disastrous consequences that might follow a blowout in drilling within closely inhabited townsite areas, special precautions are necessary in control of pressures and provision of large and adequate drilling equipment. Under present conditions and schedules wells are usually drilled and completed in 18 to 20 days. Wells average on potential tests from 500 to 550 bbls. daily through a three-sixteenths inch choke, with working pressures flowing through tubing varying from 450 to 800 pounds.

With the new development there now are approximately 180 wells in the field, with daily allowable production running about 52 bbls. per well. The completion rate is being increased to from four to six wells per week.

The producing area now extends more than 36 miles from its most northerly production to the present southerly limits, and at its widest point is nearly 2 miles. This is nearly double the productive area at the start of the present play.

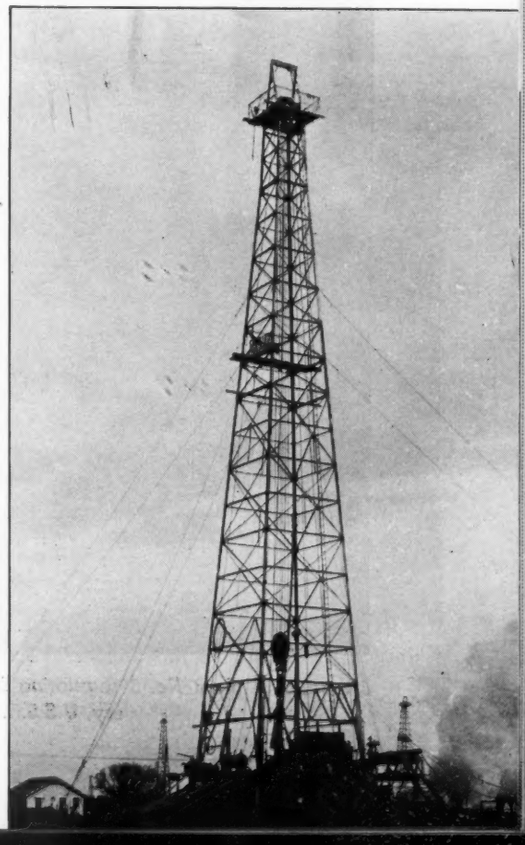
In the older part of the field efforts are being directed to working over wells, particularly those completed in the original 6,500-foot sand above the 7,100-foot sand. Several work-over rigs are being kept busy. Due to the extreme thinness of the saturated zone in the older shallower sands, production in them gradually is becoming exhausted, and as rapidly as necessary, the wells are being deepened principally to the 7,100-foot sand, in which the most consistent production has been obtained. The small oil interval between the water and the gas has made necessary frequent working over to shut off water or correct excessively high gas-oil ratios that maximum oil recovery from these sands might be obtained.

The McCampbell field was opened in July 1936 by Buckingham Oil Co. No. 1 McCampbell. This well, on the northwest side, or what has proved the upper limits of the field, about 2 miles north of the Aransas Pass townsite, originally was drilled to a total of 7,501 feet, where it blew out for a short time. The well was killed, and the hole plugged back and sidetracked to the 6,500-foot sand which had been passed up, in which casing was perforated from 6,554-60 feet. This well was just over the line in Aransas County, while the second well, a diagonal northwest offset, was in San Patricio County. In the first year only one additional well, making a total of three, was completed.

Characteristic of these earlier wells completed in the 6,500-foot sand were high gas-oil ratios, although after a period of production most of them showed declining ratios with higher fluid recovery. This discouraged any active development of that sand. In this early development a number of wells were drilled to lower levels, finding the lower sands but it was not until May 1937 that the first well was completed in the 7,100-foot sand, this well being Buckingham Oil Co. No. 2-B McCampbell, Block 40, at the extreme north end. With this discovery more active development was undertaken, the new sand showing a thicker saturated zone and more prolific and consistent oil production, and at times during the remainder of the year as many as 15 rigs were kept running. In the section where that drilling took place tracts were larger and in more controlled hands, and with the proving up of a substantial area, drilling toward the close of the year settled to more routine development, and by late spring of 1938 only three or four rigs were running. The field remained comparatively quiet until the drilling of the Corgey & Grote outpost, which extended the 7,100-foot production more than a mile southward into the small tract area bordering the townsite.

An outpost test being watched is Richardson Petroleum Co. No. 1 Sherwood on the line of Lots 10 and 11, Block 80, more than 1½ miles southwest of present production, which at a total depth of 8,310 feet has run casing and is awaiting cement to set. Although there is no information released on this well, it is reported to have had several sands showing oil, and gives promise of extending the field. Its location, in addition to its relationship with the McCampbell field, is about 2 miles northeast of Ingleside, where additional townsite drilling would follow if production is extended.

Drilling in Aransas townsite extension



SPARKS FROM THE NEWS

OPPORTUNITY

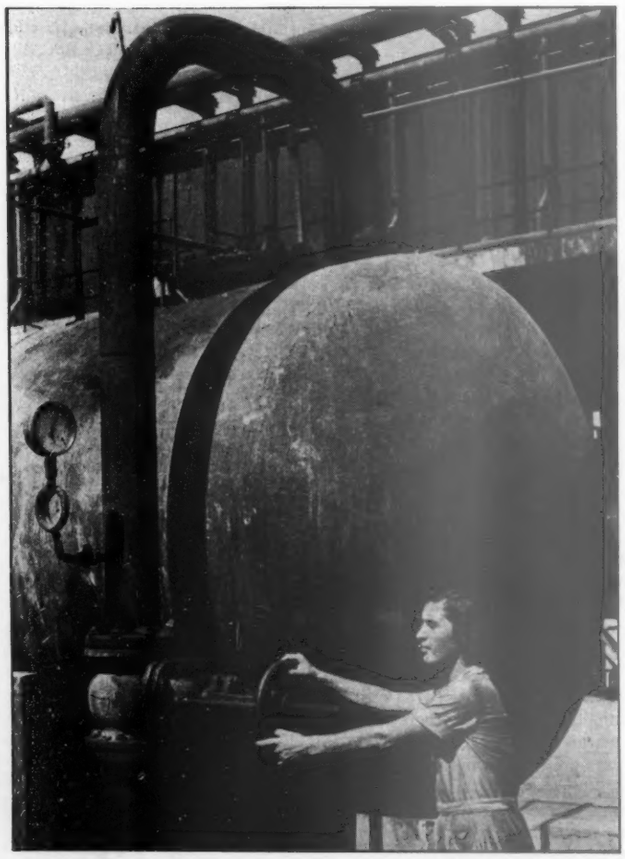
The B. of M. prognosticates that March gasoline demand will be the largest in history for that month by 4 per cent, offering an excellent opportunity to get stocks down to where they should be over next 30 days.

MIDDLE WEST ACTIVITIES

New wells point to important field discoveries in Indiana and Kentucky while Illinois production jumps to a new peak of 155,408 bbls. daily.

BREAK FOR INDIANS

Indian leases are returning to favor with Oklahoma oil men, one company paying $27.01 an acre for a Kiowa County tract at a sale in Anadarko last week—the highest price paid at a lease sale there in three years.



Brigadier of plant No. 3 regulating flow of oil at Baku refinery, U.S.S.R.

JUNK THE COMPACT

Judge Beaty would junk the Interstate Oil Compact Commission and take on a measure of direct federal control for the oil business.

EXCEED SEVENTEEN BILLION

New pools and extensions in the old ones have added more than two billion barrels to proven oil reserves over the past year and they now total more than seventeen billion barrels, says the A.P.I.

DESIGN AND OPERATION

Carefully designed before construction started, a $5,000,000 refinery unit in California was operating at capacity within a week after completion.

LOT OF OIL

Aransas Pass, Tex., is to have a town-lot oil development, an extension to the Campbell field last week bringing production within 1,000 feet of the city gates.

DANGER?

Gasoline stocks are rising in the same threatening way they did last year. P.S. And receiving about the same attention.

OBJECT LESSON

What the Government will do with coastal submerged oil lands if it acquires them is indicated by its handling of public domain in several states.

GOING DOWN!

Bright stock inventories in the Mid-Continent (a market sore spot) were 22.8 per cent lower at the opening of February than on that date in 1938.

ONE YEAR

Elliott Roosevelt, who is in a position to know whereof he speaks, gives the industry one year to get its house in order.

SHIFT

The activity of lease buyers is about to give way to the drilling rig in northern Missouri, four locations having been announced with work to start when weather permits.

No. 1 Miller, joint operation of Continental Oil Co., Amerada Petroleum Corp. and California Co., on Divide Creek, Mesa County, Colorado, being drilled on the public domain. Its elevation is 9,395 feet above sea level, the highest well in the country, and present total depth is 9,410 feet, the deepest well in the state. Its status is not affected by changes in the leasing act

1935 Leasing Act Is Storm Center

By TOLBERT R. INGRAM

DENVER, Colo., Feb. 27.—The conservation and development of the public domain, particularly in regard to oil and gas, once more is the target of proposed congressional legislation and recriminations between bureau heads in Washington and various interests in the public land states.

It was once believed that the enactment of the oil leasing act of February 25, 1920, marked the beginning of a better understanding all around and would pave the way for the adjustment of the major difficulties arising out of oil and gas development on government land. In this, however, everybody seems to have been disappointed. The law has been amended a number of times and, during the Hoover administration, the granting of prospecting permits actually was suspended. Generally, the secretary of the interior is given wide discretionary powers by the law and its various amendments, and the exercise of these powers may be said to have widened, instead of healing, the breach.

The present administration in Washington favored a general revision of the methods of opening the public domain for oil and gas development and this resulted in the passage of the Greever-O'Mahoney amendment of August 21, 1935. This was a change-over from the issuing of oil and gas prospecting permits to the granting of leases.

Under the permit plan leases were granted following a discovery. These leases were in two classes, the preferentiatl lease consisting of 25 per cent of the total acreage in the permit selected by the operator which carries a royalty of 5 per cent to the Government, and other advantages over the less desirable acreage in the permit. In advocating the proposed change the secretary expressed the opinion before the House public lands committee that the Government was not receiving proper remuneration for its land and that its revenue should be based more on what the states and owners of private land were receiving. In other words, it was supposed that oil development on federal land was to be placed on an equality with other land developed by private industry. There was no serious objection to the change. The difficulties have arisen mainly out of the regulations made under the amendment. The secretary was given discretionary powers in establishing regulations under the amendment, including the royalties to be paid, except that a minimum of 12½ per cent was established by the law.

The rules and regulations promulgated by the department for the granting of general leases under the 1935 amendment put into effect a sliding scale of royalties starting with the minimum of 12½ per cent and increasing up to 32 per cent. They also required a bond of $5,000 upon the starting of drilling operations for the protection of the owner of surface rights, this being the customary drilling bond to which there is no objection. A bond of $1,000 also was required at the time the lease was granted, the purpose of this, in effect, being to guarantee the subsequent payment of annual rentals.

The terms of this bond were such that many small wildcatters were unable to provide it, especially after paying the first year's rentals. These rentals for the first year were 50 cents per acre, or $1,250 the first year on a unit of 2,560 acres. These regulations governing general leases were on what is strictly wildcat acreage. Generally the person or group of persons taking such leases has to do geological work and go to other expenses before the acreage is ready for development and the upshot is that the average small wildcatter is practically shut out from the public domain in prospecting for oil and gas.

The granting of leases within a known producing geological structure comes under a different category and is subject to sale at auction.

Tied up with these problems is that of permits taken out under the law before its amendment in 1935. At present, under the law and the rules and regulations, all old prospecting permits which were not committed to a unit development agreement or plan which had been previously approved without rejection by the Department of the Interior were subject to conversion to leases under the 1935 amendment and free of rentals for the first two years. So-called "new" leases, however, are subject to the sliding scale of royalties, the $1,000 bond and the 50 cents per acre rental for the first year. The royalty schedule was objected to as prohibitive, especially in view of the policy of the department to limit the number of wells drilled in a given pool, which has a tendency to throw the production of the wells into the higher brackets.

When the leasing amendment of 1935 went into effect, there were many applications for new leases. Many of these were to establish priorities. In the course of time the call went out for the making of the $1,000 bond, payment of the first year's rentals, and the execution of the leases.

(Continued on Page 111)

At the Divide Creek well: Jack Mulniax, geological department, Continental Oil Co.; R. R. Stootsberry, petroleum engineer; Charles S. Lavington, geologist, Continental Oil Co., and Herman F. Davies, manager, Rocky Mountain division, California Co.

Motor Fuel Stocks Show Need of Curtailment

By H. STANLEY NORMAN

NEW YORK, Feb. 27.—Immediate curtailment of petroleum refinery operations is necessary if the industry is to arrive at April 1 with motor fuel stocks anywhere near the sound economic level outlined a few months ago.

Executives of petroleum companies who, during the past months, have expressed considerable concern over the excessive gasoline inventories which the industry is carrying, have, in recent weeks, reached a state of alarm. With stocks standing above 83,000,000 bbls. on February 18 and rising at the rate of nearly 2,000,000 bbls. a week, the fear has been expressed in many quarters that unless a drastic reduction is made at once the industry will find itself on April 1 of this year in a position equally as bad as that which existed a year ago when motor fuel stocks totaled more than 92,000,000 bbls.

While a few marketing men and others in the industry appear to have taken a fatalistic view of the situation, others feel that the situation should and could be corrected. Based on the forecast of demand for February and March as prepared by different economists, calculations show that an immediate reduction in the rate of refinery throughputs to a level of 2,950,000 bbls. a day would eliminate any further increase in gasoline stocks. While the reduction seems drastic from recent average level of about 3,200,000 bbls. daily, it is pointed out that the industry has ample incentive to attempt the projected goal. The incentive is based on demoralized conditions which prevailed in the motor fuel market most of last summer. The gasoline demand was slightly higher than in 1937 but due to the burdensome stock position which the industry struggled all summer to correct the resulting profits were at least disappointing. Moderate increase in the demand for gasoline as revealed by recent statistics are the only clue that can be found to the high level at which refinery operations are being maintained, and it would appear that every refiner expects to secure for himself the entire increase in consumption that may be expected this year. The actual increase for 1939 has been estimated at various levels between 3 and 5 per cent over 1938.

On a 4 per cent increase the best that can be expected for domestic gasoline consumption in the current year totals 541,743,000 bbls. On the surface, the increase of 20,086,000 bbls. appears substantial, but the industry is facing the prospect that exports of 50,198,000 bbls. for 1938 will not keep pace with domestic demand and, therefore, throw the difference into the latter channels of consumption. An interesting insight into the situation can be obtained by comparing the runs to stills during recent weeks with the Bureau of Mines estimate of the throughput required to meet the demand for refined products. It estimated that January runs to stills at the rate of 3,048,100 bbls. a day would meet the demand for motor fuel and at the same time permit an accumulation of 5,500,000 bbls. of gasoline. For February the Bureau estimated that runs to stills at the rate of 3,048,600 bbls. a day would meet the demand and permit the accumulation of an additional 4,500,000 bbls. of motor fuel. Such accumulations as the bureau provided for in its forecasts would result in gasoline stocks at April 1 somewhat greater than the so-called "desirable economic stocks." The opinions of petroleum economists as to what constituted economically desirable gasoline stocks at April 1 ranged from 80,000,000 to 83,000,000 bbls. Actually, however, the refiners maintained their runs to stills at a rate of 3,235,000 bbs. a day during January and 3,130,000 during the first 18 days of February. Converted into monthly totals and assuming that the rate of 3,130,000 bbls. a day continued throughout February, there will have been run to stills during these two months 8,000,000 bbls. more than the Bureau of Mines indicated in their forecasts. At a yield of 44 per cent and including the natural gasoline blended with motor fuel produced from crude, this excess would result in adding to gasoline stocks close to 4,000,000 bbls. over and above the 10,000,000 bbls. for which the bureau made provision in its calculation of crude oil demand.

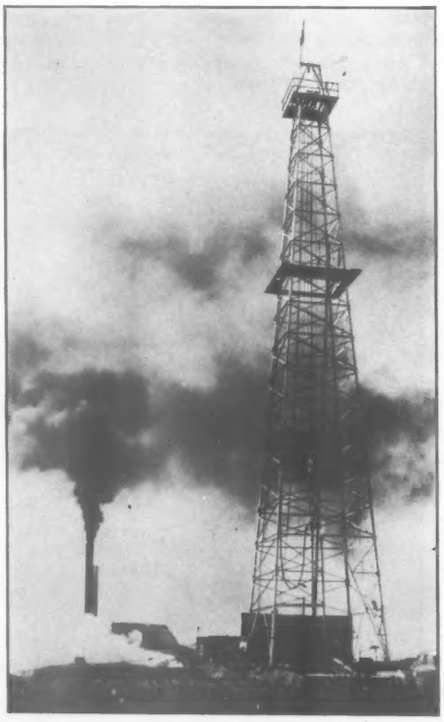
The theme of self-reguation by refiners was stressed in the middle of last month at the annual meeting of the American Institute of Mining and Metallurgical Engineers. At that time the excesses were divided approximately 1,000,000 bbls. on the Gulf Coast; 1,000,000 bbls. on the Atlantic Coast, and about 2,400,000 bbls. in the Indiana, Illinois, and Kentucky refining district. There was also an excess of approximately 1,000,000 bbls. on the Pacific Coast.

In view of the interrelationship of the Gulf and Atlantic coast refiners and supplies, the 1,000,000 bbls. of excessive motor fuel inventories present in each may be considered as one for practical purposes. In view of the numbers of large plants on the Gulf and Atlantic coasts it is indicated that the excesses are reasonably well scattered.

The small refineries which have sprung up in Illinois as a result of the availability of inexpensive and abundant crude supplies are declared to be relatively unimportant factors in the motor fuel stock position. The problem of bringing refinery throughput within the economic limits indicated by various factors, including economists in the industry, regulatory officials and inferentially by the Bureau of Mines is one that can be solved only by the manufacturing executives and intracompany committees.

Wildcat to Test Deep Zones in Reelfoot Lake Area, Tenn.

A deep wildcat test near the shores of Reelfoot Lake has attracted attention of oil operators to the northwest corner of Tennessee and neighboring portions of Missouri and Arkansas. It is being drilled by E. Randall Henderson at No. 1 A. M. Markham, near Lake View on the south bank of the lake in Lake County, Tennessee.



Wildcat on Reelfoot Lake, Tennessee

Several major companies are reported to have geological and geophysical crews in the area, and both major and independent operators are said to have considerable acreage leased in Lake, Dyer, and Tipton counties, Tennessee. Lease buyers also are reported active in southeastern Missouri and northeastern Arkansas. Showings of oil and gas have been reported in several tests previously drilled in the general Reelfoot district.

The area recently was geologized for Mr. Henderson by Arthur Hermann and W. R. Julian, the location for No. 1 Markham being made as a result of their findings. Rotary equipment capable of drilling to 6,000 feet is being used. Operators were drilling at approximately 3,400 feet at last report and were expecting to find a pay sand at around 4,200 feet. Several showings of oil and gas were reported in upper formations. Regardless of the outcome of this wildcat, Mr. Henderson planned to drill additional tests and it was expected other operators interested in the Reelfoot district would start operations in the spring or early summer.

Several miles southwest of Reelfoot Lake and across the Mississippi River, Benedum & Trees were reported drilling below 4,000 feet at a wildcat in Mississippi County, northeastern Arkansas.

Both southeastern and southwestern Missouri are attracting lease buyers, although activity in those sections of the state has been overshadowed by the more intensive play in the northern counties. A community leasing project is reported under way at Nevada in Vernon County, southwestern Missouri, where numerous shallow producers have been drilled. Vernon County farmers and landowners are executing their leases to Earl S. Welpton, one of their number, to be held in escrow until a responsible company or operator agrees to take over and drill a well to test deep formations. A deep rotary test northwest of Nevada, that was started by independent operators last fall, has been shut down for several weeks.

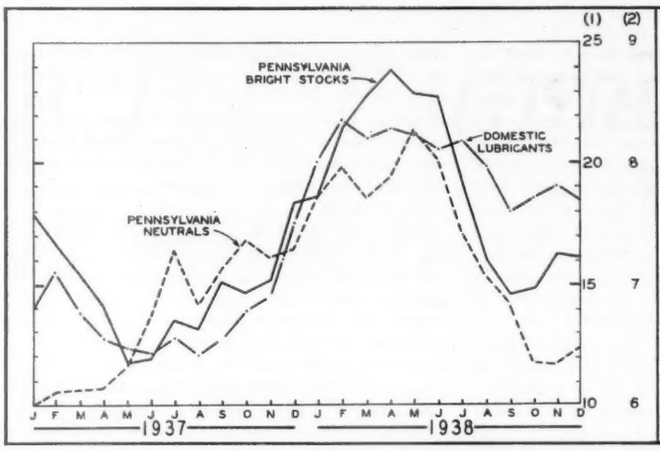


Fig. 1—Stock trends in Pennsylvania lubricants and all domestic lubricants. (1) Pennsylvania neutrals and bright stocks in millions of gallons. (2) Domestic lubricants in millions of barrels

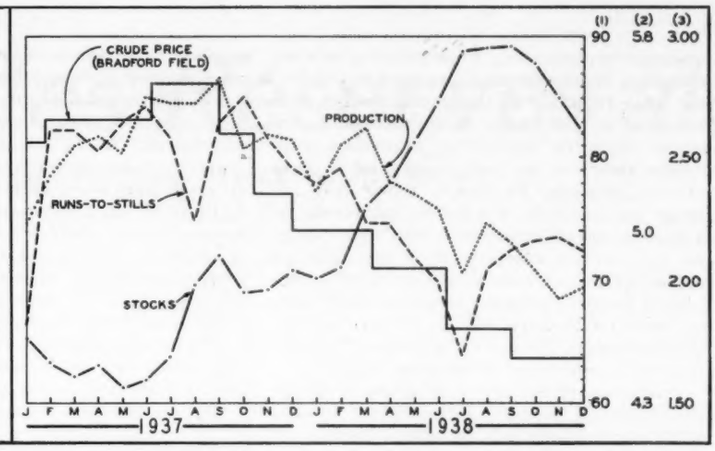


Fig. 2—Why Pennsylvania crude prices declined. (1) Daily average production in thousands of barrels. (2) Stocks in millions of barrels. (3) Bradford grade crude prices in dollars per barrel

Pennsylvania Grade Region Is Emerging From Its Slump

By J. P. O'DONNELL

OIL CITY, Pa., Feb. 27.—Indications, based on a vastly improved statistical position, particularly for lubricating oils, are that the Pennsylvania Grade crude oil region is emerging from the disastrous slump of the past two years that lifted lubricating oil inventories to all-time highs and dropped prices to record lows. So extreme were the results of the record accumulation of stocks that posted Pennsylvania lube prices, in some instances, were on a par with posted Mid-Continent prices and for the past year as a whole, the margin between the two was less than in any year for which creditable data are available. Developments of the past few months indicate this period has reached its end and that the margin is being reestablished.

During the last half of 1938 Pennsylvania lube shipments increased and production decreased and the extraordinary accumulation of inventories was entirely liquidated so that at the end of the year they were not only below the level of the previous year but were approximately normal for the season. Pennsylvania neutral and bright stock prices are now averaging 3 cents above the low levels of last summer while other neutral and bright stock prices are unchanged. Reversal of the overproduction trend strengthened crude prices and they were advanced twice this year while prices elsewhere, reduced generally last fall, continue uneasy.

The trend of Pennsylvania lubricating oil and domestic lubricant inventories is shown in Figure 1. Column No. 1 pertains to Pennsylvania lubricating oil inventories and is calculated in millions of gallons. Column 2 pertains to domestic lubricants and is calculated in millions of barrels. It shows Pennsylvania neutral inventories began to increase as early as May, 1937, and bright stock inventories, a month later. The latter reached an all-time high at the end of April, 1938, and the former, at the end of May, 1938. Stocks of domestic lubricants attained their peak in February, 1938.

Demand for lubricants, with a fair degree of accuracy, parallels the index of business activity. Business activity attained a peak in May, 1937, and then dropped steadily until June, 1938, when it began to improve. The trend of lubricant inventories approximately paralleled the trend in business activity during this period.

Stocks of Pennsylvania neutral at the end of January, 1937, were slightly above the 1932-36 average while those of bright stock were slightly under that average. Therefore it is assumed the position of lubricating oils as a whole was at an approximately economical level in the first part of 1937. Inventories began to increase about mid-year and continued upward almost without interruption until domestic lubricants reached a peak of 8,363,000 bbls. at the end of February, 1938; Pennsylvania bright stocks, a peak of 23,800,000 gallons at the end of April, and Pennsylvania neutrals, a peak of 21,450,000 gallons at the end of May. By the end of the year stocks of domestic lubricants had been reduced to 7,695,000 bbls.; Pennsylvania bright stocks to 16,125,000 gallons, and Pennsylvania neutrals to 12,350,000 gallons. Percentagewise, the degree of improvement for the Pennsylvania products far surpassed the improvement in domestic lubricants. Pennsylvania bright stock inventories had been cut 32 per cent and Pennsylvania neutral inventories 42 per cent while stocks of domestic lubricants dropped but 8 per cent. It may be likewise noted the latter were higher as of December 31, 1938, than as of December 31, 1937.

TABLE 1

Year—	Total lubricant demand	Pennsylvania Crude oil production	Pennsylvania Est. lube content	Pennsylvania Percentage of demand
1924	27,227,000	17,014,000	3,913,220	14.4
1925	30,259,000	17,797,000	4,093,310	13.5
1926	32,003,000	18,874,000	4,341,020	13.6
1927	31,445,000	20,137,000	4,631,510	14.7
1928	34,191,000	21,097,000	4,852,310	14.2
1929	34,469,000	23,425,000	5,387,750	15.6
1930	31,524,000	24,526,000	5,640,980	17.9
1931	28,196,000	21,884,000	5,033,320	17.8
1932	23,548,000	21,513,000	4,947,990	21.0
1933	25,370,000	21,214,000	4,879,220	19.2
1934	26,148,000	23,958,000	5,510,340	21.0
1935	28,097,000	25,502,000	5,865,260	20.8
1936	31,014,000	27,072,000	6,226,560	20.0
1937	34,298,000	29,862,000	6,868,260	20.0
1938	30,650,000	27,316,000	6,282,680	20.4

Consideration of shipments and production is essential in evaluating the importance of an inventory position. Shipments of domestic lubricants, including both domestic and export demand, dropped 11 per cent in 1938. At the same time shipments of Pennsylvania bright stocks dropped 7 per cent while shipments of Pennsylvania neutral actually increased 3 per cent and were the heaviest in the history of the region. Production of domestic lubricants and Pennsylvania bright stocks and neutrals dropped about the same amount, roughly 13 per cent.

In recognizing the fact that Pennsylvania prices reached bottom in 1938 it must be considered that at the same time inventories of bright stocks and neutrals were at the highest point in history and consequently prices were under their heaviest pressure. Pennsylvania refiners are quick to admit the depression in business of 1937 caught them unawares as it did many other industries. It was in anticipation of a demand that failed to materialize that runs were stepped up to more than 80,000 bbls. per day, a figure not equaled in any 1938 month.

Figure 2 illustrates the disaster that overtook the Pennsylvania crude market from June, 1937, to September, 1938, inclusive. Production exceeded demand in 14 of those 16 months, stocks increased 1,400,000 bbls. and prices were reduced six times. In Figure 2 Column 1 pertains to daily average production and the daily average indicated demand in thousands of barrels; Column 2, to stocks in millions of barrels, and Column 3, to prices (Bradford field) in dollars. Table 3 shows how stocks were affected by the unbalanced production-demand relationship in the past two years.

Following a year and four months of almost

constant overproduction, the relationship between production and demand was reversed in October, 1938. (See Table 2.) In that month and in both November and December demand exceeded production with the result that substantial withdrawals from storage were necessitated to meet refiners' demands. The graph shows that the change was due both to a further curtailment of production and an expansion in runs. This change and the resultant improvement in the statistical position of Pennsylvania Grade crude oil culminated in two price advances ranging from 27 cents per barrel for Buckeye down to 19 cents per barrel for Southwest Pennsylvania grades. The Bradford price was advanced 20 cents per barrel.

Production of Pennsylvania Grade crude oil dropped from a "modern" peak of 29,862,000 bbls. in 1937 to 27,316,000 bbls. in 1938, a decrease of 2,546,000 bbls., or 8.5 per cent. Runs to stills dropped from 29,473,000 bbls. in 1937 to 26,695,000 bbls. in 1938, a decrease of 9.4 per cent. Production exceeded demand by 621,000 bbls. in 1938 against an overproduction of 389,000 bbls. in 1937.

Comparative data on 1938 and 1937 production and demand for Pennsylvania Grade crude as shown by the U. S. Bureau of Mines report for December follow:

State—	1938	1937
New York	5,045,000	5,478,000
Pennsylvania	17,426,000	19,189,000
Southeast Ohio*	1,161,000	1,350,000
West Virginia	3,684,000	3,845,000
Total	27,316,000	29,862,000
Ind. demand	26,695,000	29,473,000
Excess	621,000	389,000

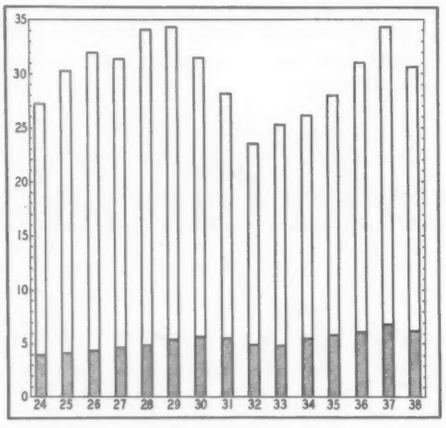
*Calculated.

When the period of overproduction ended in September, stocks of Pennsylvania crude had risen to 5,764,000 bbls., an increase of 1,391,000 bbls. from the low of 4,373,000 bbls. in May, 1937, when the extended period of overproduction began. Stocks at the end of 1938 totaled 5,443,000 bbls., a reduction of 321,000 bbls. or fully 23 per cent from September's high. This trend continued during early 1938 and by February 4 a total reduction of 570,000 bbls., as shown by the Bureau of Mines weekly reports, had been effected since the week ended September 24, 1938.

Despite the cutback in production in 1938, the Pennsylvania region apparently yielded none of its markets as is indicated in Table 1 which shows the combined domestic and export demand for lubricants, the production of Pennsylvania Grade crude, the estimated lubricating oil content of the crude produced and the percentage of the demand which that amount of lubricating oil could have supplied. These figures, of course, do not reflect the exact position of Pennsylvania lubricants in relation to the national picture since in some years there were additions to storage and in other years withdrawals. On the whole, the conclusions are probably conservative since stocks of Pennsylvania crude were lower on December 31, 1938, than on December 31, 1929, the last date for which accurate data on stocks are obtainable. Therefore, during this period runs to stills were greater than crude oil production. Over a 10-year period the effect of refined oil inventory accumulations or withdrawals would be inconsequential.

The relationship between Pennsylvania lubricant production and domestic demand over the past 15 years is shown graphically in Figure 3.

On this basis it is apparent the lubricant con-



Pennsylvania lubricant production (shaded) and total domestic demand for all lubricants

tent of Pennsylvania crude produced in 1938 could have supplied 20.4 per cent of the entire foreign and domestic demand, exactly its average for the past five years. This average of 20.4 per cent of total demand during the 1934-38 period contrasts with an average of 18.3 per cent in the 1929-33 period and 14.1 per cent in the 1924-28 period.

It is interesting to note that the Pennsylvania region, now dependent entirely on lubricants for profit, has vastly increased its crude oil production in the past 15 years while demand for lubricants has increased comparatively slightly. Production of Pennsylvania crude increased from 17,014,000 bbls. in 1924 to 27,316,000 bbls. in 1938, a gain of 10,302,000 bbls., or 60.5 per cent. In the same period combined domestic and export demand for lubricants increased from 27,227,000 bbls. in 1924 to 30,650,000 bbls. in 1938, an increase of 3,423,000 bbls., or only 12.5 per cent. Proportionately the increase in Pennsylvania production in the past five years therefore was almost five times as great as the demand for its principal products.

This great expansion undoubtedly has been a factor in reducing the wholesale prices of Pennsylvania lubricating oil stocks but a factor of at least as great importance is the trend of the whole industry toward lower prices that may be witnessed in gasoline, kerosene, and fuel oil as well as in lubricating oils. It has been the declining trend in products other than lubricating oils that has forced the Pennsylvania refiners, paying high prices for crude, to depend on the latter for profit. During the past 10 years the average price of Bradford crude at the wells has been approximately 5.5 cents per gallon. The average refinery price on U. S. motor gasoline at the same time has been 5.9 cents; kerosene 4.8 cents, and fuel oil 4 cents per gallon.

From the foregoing it appears the Pennsylvania region is emerging successfully from one of its most severe depressions. In losing markets during that time it was not alone, for demand for lubricants suffered generally. While its lubricating oil inventories mounted to record highs, the excesses have been liquidated entirely and the process of liquidating accumulated crude oil stocks is also under way. Depreciation in prices cannot be truly evaluated, for posted prices during the greater part of the past two years have not reflected actual sales. With a minimum increase of 10 per cent in demand for lubricants anticipated during this year and with production of both crude and refined oils continuing within economic limits, the prospects are the Pennsylvania region will enjoy substantial improvement during 1939 on the foundation laid during the latter part of 1938.

TABLE 2—PENNSYLVANIA CRUDE PRODUCTION AND DEMAND

Month—	Daily average—		
1937:	Production	Demand	Excess
January	74,500	66,300	8,200
February	78,400	82,400	*4,000
March	80,900	82,300	*1,400
April	81,800	80,500	1,300
May	80,200	83,000	*2,800
June	85,100	84,400	700
July	84,600	81,700	2,900
August	84,400	74,800	9,600
September	86,700	82,900	3,800
October	80,700	85,200	*4,500
November	81,900	81,700	200
December	81,400	79,100	2,300
1938:			
January	77,200	77,900	*700
February	81,000	79,100	1,900
March	82,400	74,700	7,700
April	78,100	74,600	3,500
May	77,000	71,900	5,100
June	75,900	70,000	5,900
July	70,500	63,900	6,600
August	74,600	70,900	3,700
September	73,000	72,600	400
October	70,900	73,300	*2,400
November	68,500	73,600	*5,100
December	69,500	72,500	*3,000

*Underproduction.

TABLE 3—PENNSYLVANIA LUBRICANT PRODUCTION AND DOMESTIC DEMAND

Month—	At	Pipe line	Total
1937:	refineries	tank farm	storage
January	854,000	3,723,000	4,577,000
February	807,000	3,654,000	4,461,000
March	844,000	3,573,000	4,417,000
April	849,000	3,605,000	4,454,000
May	879,000	3,494,000	4,373,000
June	909,000	3,483,000	4,392,000
July	905,000	3,579,000	4,484,000
August	871,000	3,909,000	4,780,000
September	868,000	4,030,000	4,898,000
October	844,000	3,913,000	4,757,000
November	840,000	3,928,000	4,768,000
December	833,000	4,011,000	4,844,000
1938:			
January	730,000	4,084,000	4,814,000
February	741,000	4,116,000	4,857,000
March	777,000	4,325,000	5,102,000
April	783,000	4,424,000	5,207,000
May	780,000	4,583,000	5,363,000
June	710,000	4,823,000	5,533,000
July	803,000	4,939,000	5,742,000
August	829,000	4,928,000	5,757,000
September	879,000	4,885,000	5,764,000
October	849,000	4,841,000	5,690,000
November	846,000	4,696,000	5,542,000
December	765,000	4,678,000	5,443,000

You Will Be Interested

in the first complete description of the Richfield Oil Co.'s new refinery at Watson, Calif., starting on page 36. This $5,000,000 project of the past year, which has replaced three older plants, is now refining 50,000 bbls. daily of crude oil in one uninterrupted operation. Here are some of the features that are described in detail:

More than 10,000 units of piping were fabricated and tested.

Twenty-two bubble towers are used, each weighing between 60 and 140 tons.

Seven thousand yards of concrete were used for foundations.

The refinery water circulation is equivalent to the needs of a city of 300,000 people.

Not one serious injury occurred during the entire construction program.

The six heaters serving the plant required 8 miles of alloy tubing, 800,000 fire bricks, and 1,200 tons of structural steel.

The control board serving these units contains 137 instruments. The board is 8 feet high and 83 feet long.

A.P.I. Estimates Reserves at 17 Billion Barrels

ESTIMATED PROVED PETROLEUM RESERVES IN THE UNITED STATES

(Barrels of 42 gallons)

State—	Proved reserves as of Jan. 1, 1938 (1)	Revisions in proved reserves (including extensions) in fields known on Jan. 1,1938 (2)	Estimated proved reserves in new pools and new producing horizons discovered in 1938 (3)	Total columns 1, 2, and 3 (4)	Production during 1938* (5)	Proved reserves as of Jan. 1, 1939 (6)
Eastern states:						
Illinois	40,884,000	17,828,000	208,064,000	266,776,000	23,929,000	242,847,000
Indiana	2,622,000	4,178,000	200,000	7,000,000	969,000	6,031,000
Kentucky	38,366,000	.....	5,000,000	43,366,000	5,821,000	37,545,000
Michigan	49,181,000	—3,451,000	16,230,000	61,960,000	19,211,000	42,749,000
New York	60,535,000	—15,000,000	.....	45,535,000	5,045,000	40,490,000
Ohio	28,456,000	1,200,000	.....	29,656,000	3,298,000	26,358,000
Pennsylvania	287,886,000	—70,000,000	.....	217,886,000	17,426,000	200,460,000
West Virginia	28,152,000	.....	.....	28,152,000	3,684,000	24,468,000
Total	536,082,000	—65,245,000	229,494,000	700,331,000	79,383,000	620,948,000
Central and southern states:						
New Mexico (SE)	541,173,000	192,024,000	400,000	733,597,000	35,401,000	698,196,000
Texas	8,247,928,000	1,443,521,000	231,929,000	9,923,378,000	475,614,000	9,447,764,000
Oklahoma	1,212,252,000	98,400,000	26,600,000	1,337,252,000	174,882,000	1,162,370,000
Kansas	601,317,000	5,700,000	65,800,000	672,817,000	59,587,000	613,230,000
Arkansas	192,101,000	—20,978,000	35,200,000	206,323,000	18,077,000	188,246,000
Louisiana	713,434,000	335,764,000	85,870,000	1,135,068,000	94,812,000	1,040,256,000
Total	11,508,205,000	2,054,431,000	445,799,000	14,008,435,000	858,373,000	13,150,062,000
Rocky Mountain states:						
Wyoming	265,922,000	14,015,000	200,000	280,137,000	19,004,000	261,133,000
Montana	109,378,000	.....	.....	109,378,000	4,907,000	104,471,000
Colorado	19,125,000	.....	.....	19,125,000	1,412,000	17,713,000
New Mexico (NW)	5,414,000	.....	.....	5,414,000	358,000	5,056,000
Total	399,839,000	14,015,000	200,000	414,054,000	25,681,000	388,373,000
California	3,063,142,000	240,370,000	135,000,000	3,438,512,000	249,749,000	3,188,763,000
Total United States	15,507,268,000	2,243,571,000	810,493,000	18,561,332,000	1,213,186,000	17,348,146,000

*These are U. S. Bureau of Mines figures. No reserves were included for the states of Missouri, Tennessee, and Utah for which the Bureau of Mines reports 68,000 bbls. production in 1938.

The American Petroleum Institute Committee on Petroleum Reserves estimates that proved reserves of crude oil in the United States as of January 1, 1939, total 17,348,146,000 bbls., 1,840,878,000 bbls. greater than on January 1, 1938. These figures include all grades of crude oil and distillate, known to be recoverable under existing economic and operating conditions. Because of further development and additional information secured during 1938, estimated reserves in the known fields of January 1, 1938, were revised upward by 2,243,571,000 bbls., while discoveries of new pools and new producing horizons in old pools account for 810,493,000 bbls., a total addition of 3,054,064,000 bbls. Deducting actual production in 1938 of 1,213,186,000 bbls. results in the net increase in estimated reserves of 1,840,878,000 bbls.

In Column 1 of the accompanying table are the estimates of proved reserves arrived at by this committee as of January 1, 1938.

In Column 2 are listed changes which oil field development during 1938 indicated as desirable in the estimates of Column 1. These changes are generally additive although in a few cases reductions were necessary. These revisions have resulted from extensions of known pools and from new data pertaining to reservoir conditions such as thickness and permeability of the pay zone, percentage recovery, etc.

In Column 3 are shown the proved reserves in new pools discovered in 1938, also the proved reserves in new producing horizons discovered in 1938 in the older, known pools.

Column 4 is the total of Columns 1, 2, and 3. The production of the year 1938 (Column 5) is deducted from Column 4 to arrive at the estimated proved reserves as of January 1, 1939, shown in Column 6.

The estimates refer only to reserves already proved by drilling. Pools tested by only one or two wells have been assigned relatively low reserves which may be considerably augmented by later development. These figures do not include any estimate of the reserves which may be found in areas known to be favorable to the accumulation of oil but as yet untested.

The total personnel of the subcommittee which was largely responsible for the analysis of the data numbered 60 experienced geologists and petroleum engineers.

The committee on petroleum reserves is composed of J. Edgar Pew, chairman, Sun Oil Co.; R. F. Baker, Texas Co., New York; L. T. Barrow, Humble Oil & Refining Co.; Frank R. Clark, Ohio Oil Co., Tulsa; G. Clark Gester, Standard Oil Co. of California; F. H. Lahee, Sun Oil Co., Dallas, Tex.; J. M. Sands, Phillips Petroleum Co., Bartlesville, Okla.; Fred Van Covern, American Petroleum Institute; Theron Wasson, Pure Oil Co., Chicago; Fred E. Wood, Standard Oil Co. (Indiana), Chicago.

Bourque Resigns From W.P.R.A. to Head Sales Organization

A. V. Bourque, who has been active in association work in the Mid-Continent area for several years, has announced his resignation as secretary and treasurer of the Western Petroleum Refiners Association, to accept the presidency of the Petroleum Sales Co.

The newly organized petroleum company has been incorporated under the laws of Oklahoma to engage in the wholesale marketing business. It will have facilities to own and store petroleum products as well as engage in a general brokerage business. The principal offices will be in Tulsa where office headquarters will be announced in a few days.

Other officers of the company are: Vice president, Rex H. Winget, vice president of the Cushing Refining & Gasoline Co., Cushing, Okla.; secretary and treasurer, T. A. Helling, vice president, El Dorado Refining Co., Eldorado, Kans.; directors: C. L. Mayhall, sales manager, Anderson-Prichard Oil Corp., Okahoma City; Roy B. Jones, president, Panhandle Refining Co., Wichita Falls, Tex.; F. W. Burford, president, East Texas Refining Co., Dallas, and M. J. Grogan, president, Rodessa Oil & Refining Corp., Shreveport. These concerns operate refineries in the Mid-Continent area.

Mr. Bourque is widely known throughout the industry due to his work in connection with associations. As secretary he was placed in charge of the Natural Gasoline Association of America when it was organized in 1921. His administration was successful and the work of the association was expanded rapidly. He resigned in 1928 to become secretary and later treasurer of the Western Petroleum Refiners Association.

He was placed in charge of the association's headquarters at Tulsa in 1935 following the death of the late Howard Bennette, executive manager with whom he associated for several years. The membership of the association now includes most of the active refining companies in the Mid-Continent with several member companies in other areas.

Mr. Bourque's resignation will be considered by the association's executive committee of nine members meeting in Tulsa March 2. It is expected that the resignation will become effective following the annual meeting which will be held in San Antonio March 20-22.

A. V. BOURQUE

STATE CAPITALS

LOUISIANA

THE DEPARTMENT OF CONSERVATION of Louisiana on February 23 placed an allowable daily production of 2,700 bbls. on the Shreveport field of Caddo Parish. The field, discovered over seven months ago, has been producing under a temporary ruling granting a flat allowable of 300 bbls. per well daily. The new allowable figure gives the field, producing in 13 wells, a daily total of 2,700 bbls., representing a cut of about 1,200 bbls. daily. An order for the field, regulating spacing, completion, and gas-oil ratio practices is believed ready for announcement by the conservation body in the near future. Other North Louisiana fields which received allowable cuts were Lisbon, from 10,000 to 7,750 bbls. daily, and Rodessa, reduced from 29,000 to 28,000 bbls. daily. Cotton Valley wells in the Bodcaw and Holloway sections were given additional allowables to bring the total daily figure from 6,800 to 7,700 bbls., due to completion of new wells in the field over the past month.

Allowable production was placed at 192,320 bbls. per day in the Gulf coastal fields, and 61,900 bbls. in North Louisiana, a total for the state of 254,220 bbls. per day, or only 920 bbls. per day below the February allowable. Individual field allowables include Caillou Island, 14,850 bbls.; Evangeline (Jennings), 21,000 bbls.: Iberia, 15,250 bbls.; Iowa, 13,000 bbls.; Lafitte, 15,000 bbls.; and Rodessa, 28,000 bbls., the foregoing being the largest fields in the state.

ARKANSAS

THE ARKANSAS OIL AND GAS COMMISSION, newly formed control body provided for in the model conservation bill which was passed by both state legislative bodies and signed by the governor, held its first statewide hearing on February 23, under the new setup.

The schedule of allowable production which was issued following the hearing, provided for a decrease in the daily allowable production of the Miller County section of Rodessa, from approximately 8,000 bbls., to 5,140 bbls. The figures apply to wells producing from the lower Gloyd section of the field. All other flush production was given the same daily allowables as in February, with the new schedule going into effect on March 1. The state's total allowable will be 53,090 bbls. per day.

GOVERNOR CARL E. BAILEY last week announced the names of six of the seven men who will constitute the Arkansas Oil and Gas Commission. For six-year terms he named O. C. Bailey, Edward Hollyfield and J. D. Reynolds, who had been members of the old Arkansas Board of Conservation, and for four-year terms he appointed R. J. Short, a member of the old board, and L. A. Longino, who succeeds Walter Helm, resigned. For the two-year terms the governor named Basil Hoag of Texarkana, but had not named the other member, who is to serve two years. O. C. Bailey is chairman of the commission.

TEXAS

SEVERAL IMPORTANT BILLS affecting the oil industry were introduced in the Texas Legislature during the closing days of last week, after which no bills can be introduced without a suspension of rules. One bill, reportedly written by the attorney general's office and sponsored by John Bell of Cuero, completely rewrites the hot oil confiscation law and is intended to eliminate abuses occurring under the present confiscation law.

Others were: (1) A bill allowing the use of sweet gas for carbon black and also for repressuring and recycling, at present not authorized by statute, by Senator Clint Small of Amarillo. (2) A bill to give the Railroad Commission authority to prevent waste in refinery operations, by Representative Preston Anderson of San Antonio. (3) A bill intended to make mandatory the return of salt water to the producing horizon. At present the bill reads "permit" the return of salt water from oil wells to the producing sand, but it is expected that an effort will be made to change it to "require." (4) A bill which would make the natural resources pay the cost of pensions until such times as the anticipated constitutional amendment is adopted. A bill which would make it a felony to report production from a well not capable of oil and gas production received a favorable report from the house committee on oil and gas and mining.

TWO NEW PLANS FOR PRORATION were presented to the Railroad Commission at its statewide hearing last week. One was that each well be given an allowable equal to its marginal plus 1 bbl. for each 100 feet of depth. The second plan was that the marginal allowable be given to every well in Texas, the amount necessary to supply this allowable to be deducted from the total market demand, and that the remainder of the state's market demand be distributed on a basis of well potential. The first plan was offered by North Texas operators in an attempt to raise the K.M.A. field's allowable. It would also substantially increase the daily allowable of the East Texas field from its present low figure of around 20 bbls. to about 36 bbls. daily. This plan was attacked especially by Gulf Coast operators.

Chairman Lon A. Smith, subsequent to the meeting, stated that Texas oil production allowables would continue unchanged for the present and might not be altered until after the statewide hearing on March 15. He disclosed, however, that the commission is studying the plans submitted at the hearing. If each producer was given its marginal allowable and production was placed on a seven-day basis, the total for the state would be 1,267,217 bbls. daily, he said. That would leave only a small amount to be prorated among 52,863 wells which can make more than their marginal allowable.

OKLAHOMA

NO CHANGE WAS MADE in allowable production of crude oil in Oklahoma in March. The February allowable of 428,000 bbls. per day was continued. Allocations to the various pools in the state were unchanged but W. J. Armstrong, chief conservation officer, said he would recommend minor changes in allocations in the Oklahoma City Wilcox sand zone and in Class D fields and in some of the minor Seminole groups, in order to create more equitable outlets.

CALIFORNIA

DUE TO SEVERAL STATEMENTS THAT PRESSURE was being brought to bear on producers to prevent compliance with curtailment, members of the Petroleum Equipment Suppliers Association of California met with E. E. Pyles and Ross McCollum of emergency executive committee and appointed a committee to plan an oil well supply industry program to help the producers stave off a collapse. It was brought out that supply men were unanimous in their support of the crude oil curtailment program and that none of them was exerting any pressure on operators. A resumption of drilling in Santa Maria Valley where operators agreed to refrain from additional development for a period of several months has created a rather complex condition and one in which Union Oil Co. may refuse to buy its agreed purchases of 10,000 bbls. per day if the situation continues. If the production of this field gets beyond bounds and forces the buying company to terminate its agreement it may be assumed that the price would drop to the 40-cent level reached last year when operators could not agree upon an acceptable allotment for several months. Most of the operators and lessors in the Santa Maria Valley field are satisfied to stock to the curtailment agreement.

KANSAS

GOVERNOR PAYNE H. RATNER after accepting the resignation early last week of Judge J. R. Sloan, chairman of the Kansas Corporation Commission, announced the appointment of Andrew F. Schoeppel, an attorney of Ness City, as chairman, with Arnold R. Jones, an accountant of Topeka, as associate member.

E. E. Blincoe, attorney, Fort Scott, is the holdover member. His term is due to expire in March and he may be reappointed as the Democratic member, as the new chairman and associate are Republicans.

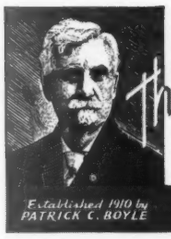
NEW MEXICO

THE NEW MEXICO OIL CONSERVATION COMMISSION increased the state oil allowable to 109,700 bbls. daily for domestic production in March, with 5,000 bbls. daily for the Artesia field for foreign export purposes.

The commission followed the recommendations of the U. S. Bureau of Mines in increasing the allowable 10,100 bbls. per day over the February figure of 99,600 bbls.

CULBERT L. OLSON, governor of California, worked on a farm, herded cattle, was employed on construction jobs, as railroad brakeman and telegraph operator. Graduated, Provo University, Utah, at 20 and entered newspaper work at Ogden, became Washington correspondent and congressional secretary. Studied law at George Washington University and University of Michigan. Became active in mining, hotels and banking in Utah and was elected state senator. Moving to California was elected state senator from Los Angeles County and served as Democratic state chairman.

Harris & Ewing photo



the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Entering Wedge?

It was thought the conclusive arguments presented a year ago against the proposal that the federal Government take over the petroleum deposits under submerged coastal lands had quieted the project for all time. But practically identical proposals have been revived, with increased support and greater possibilities they will be approved at this session of Congress than was the case last year.

The so-called Hobbs resolution would give the Navy control of the California coastal waters including the petroleum deposits that have been definitely established by private enterprise. The Nye resolution is broader in that it undertakes to give the federal Government control of all submerged lands.

The assumption that the oil reserves from these submerged lands are needed by the Navy has already been exposed and the arguments need hardly be repeated at this time.

In the first place, the only known petroleum deposits under submerged lands have been located by the private operators who brought the development right up to the coastal waters. So far as other potential deposits are concerned they can be established only by the drill and the resolutions do not propose that the navy will carry on an exploratory program and a drilling program to determine what deposits there may be in addition to those proved by private operations.

Unless the Navy is willing to do this obviously it cannot establish a petroleum reserve, particularly in time of national emergency. The Government's handling of public domain in regard to oil development is an indication of what will probably happen should it secure control of submerged lands.

Contrasted with this theoretical preparedness may be set the record established by a smaller American oil industry during the World War when it furnished an adequate supply not only for our own national needs but for the bulk of our allies as well so that Lord Curzon could say they "floated to victory on a sea of oil."

The real protection for our national defense comes from the fact that private operators in this country have 350,000 producing wells, that we have known reserves in excess of 15,000,000,000 bbls., with 450 operating refineries at strategic points and the largest units at coastal points. This great system is connected by a network of pipe lines which make petroleum products available from the inland fields at seaboard bases.

It is interesting to note that the activity for passage of these resolutions got under way just as soon as the National Resources Committee made public its report to the president which includes a recommendation that the Government claim ownership of all submerged lands.

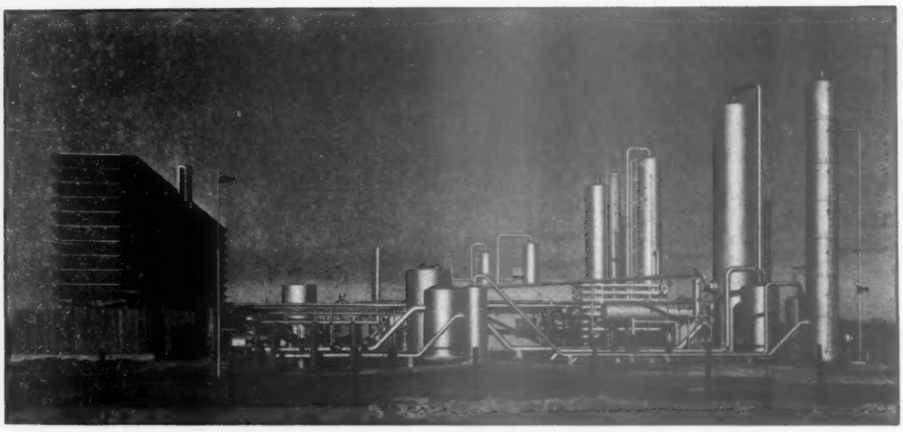
Taking possession of these lands would be a violation of the legal principles established by decisions over 150 years and, if successful, who knows but it might be carried one step farther to the confiscation of all petroleum resources as more than intimated in the committee's statement:

"It is one of the unfortunate errors of our national development that early in our history the public ownership of all subsurface mineral wealth was not declared."

This raises a national question which offers a reason why California and other coastal states deserve the support of the interior states in combating what may be only an entering wedge to a still greater claim for government ownership of a commodity of universal use.

If these resolutions can be pushed through Congress, under the guise of national defense or conservation, what is there to prevent a further attempt to extend government ownership over all mineral reserves?

Natural Gasoline



Plant of the Natural Gasoline Corp. at Aransas Pass, Tex.

The Natural Gasoline Corp. plant, located at Aransas Pass, Tex., is one of the largest on the Gulf Coast. One-third of the gas is processed through high-pressure absorbers, and two-thirds through low pressure. The high-pressure gas is all being sold for fuel.

The plant is equipped with a butane stabilizer making suitable seasonal grades of butane, which is marketed either in tankcar shipments, or in truck lots. The gasoline is all being delivered through pipe line to Corpus Christi. The natural gasoline output of the plant is sold through the Warren Petroleum Corp.

"Kink" Sessions to Take Entire Day of N.G.A.A. Convention

The eighteenth annual convention of the Natural Gasoline Association of America, scheduled for May 3-5, 1939, at the Hotel Tulsa, Tulsa, will again feature the "Operating Kinks" session for field and laboratory men of the natural gasoline industry, according to a recent announcement of B. R. Carney, Shell Petroleum Corp., chairman of the convention program committee.

This will be the fourth consecutive year for this program feature, which was originally an experiment, and is continued because of the broad response of operating men. Entries at the 1938 convention more than doubled the number presented the previous year, and for this reason the program committee voted unanimously to extend the time allotted for these interesting discussions to a full day and to increase the number of prizes offered.

This session takes the form of a prize contest in which field men compete with their original operating ideas for 12 prizes totaling $157.

J. A. LaFortune, Warren Petroleum Corp., and president of the association, is particularly enthusiastic about this field man's day. "Until recently, our convention programs have concentrated largely on subjects dealing with the highly technical phases of our industry or the broader aspects of marketing and have left little room for discussion of operating problems," he said. "While many of these subjects are interesting to field men, the superintendents and laboratory technicians, subjects more closely allied to their own problems are naturally more appealing. It is for this reason that the 'Kinks' session came into being. It provides a forum where this large group of invaluable assistants can discuss their own technical subjects and exchange operating ideas. I feel that it is particularly valuable to plant men, and all natural gasoline manufacturers should urge as many of their men as can conveniently attend to arrange to be present for these discussions."

The "Operating Kinks" session will be an informal roundtable discussion at which the field man may present his own ideas for improving or simplifying any operation connected with the manufacture of natural gasoline. It is to be an opportunity for public expression of the many valuable ideas developed by the men on the operating end of the industry. These ideas can be exchanged, criticized and discussed at the session and prizes will be awarded by a committee of gasoline plant operators. The four prizes in each of four classifications will be $15, $10, $5, and $3, respectively, and a grand prize of $25 will be awarded for the most practical and valuable idea of all classes. G. W. McCullough, Phillips Petroleum Co., is chairman of the session and awards committee.

The convention program committee, consisting of B. R. Carney, Shell Petroleum Corp., Tulsa, chairman; W. F. Fulton, United Gas Pipe Line Co., Houston; J. R. Jarvis, Lone Star Gasoline Co., Dallas; G. W. McCullough, Phillips Petroleum Co., Bartlesville; Ray E. Miller, Hanlon-Buchanan, Inc., Tulsa; W. B. Moran, J. E. Crosbie, Inc., Tulsa; E. L. Peck, Cities Service Oil Co., Bartlesville; and J. W. Vaiden, Skelly Oil Co., Tulsa, has announced the following rules and regulations for the submission of ideas for the field men's session:

Rules of Contest

1. Any employe of a natural gasoline manufacturer may submit one or more "Operating Kink" ideas.

2. Permission of the employer must be secured before any idea is submitted.

3. Each idea must be submitted in writing and three copies of each must be presented in the form designated on the "Operating Kink" blanks which may be secured from the Natural Gasoline Association of America, 923 Kennedy Building, Tulsa.

4. One clear drawing or distinct photograph may be submitted with each kink, and wherever possible the association will make slides therefrom.

5. Five minutes' time will be allotted to an employe, at the round-table discussion, for the explanation of each of his kinks.

6. The originator of the kink, although urged to do so, need not be present to explain his idea.

7. Prize awards are to be made by a committee of gasoline plant operators, and their decisions will be final.

8. All "Operating Kink" entries should be in the N.G.A.A. offices by April 24, 1939, in order that the judges may have ample time to study and classify the entries before the meeting date.

9. Any "Operating Kink" may be made within the following classifications:

(a) Operation or maintenance of engines, compressors, pumps, turbines, electric motors, electric generators or boilers.

(b) Metering or other volumetric measuring; temperature controlling, pressure controlling, volume controlling, liquid-level controlling, laboratory equipping or operating methods.

(c) Gasoline or oil distillation; fractionation; gasoline absorption, condensation or cooling; gasoline or gas treating.

(d) Field pipe line and other field operation and maintenance; gasoline storing; gasoline loading; special tools, labor-saving or safety devices; accounting or record-keeping methods; or any other phase of natural gasoline manufacture not covered within the preceding classifications.

Champlin and Bass Plant Under Construction

PALESTINE, Tex. — Preliminary work started for construction of a new gas recycling plant in the Long Lake pool by Champlin & Bass and associates on the John W. Focke lease, James Madden Survey, in the northern part of the pool.

The proposed plant will be the second for the area, the third for Anderson County, and the fourth to be started in this immediate area. Byrd-Frost, Inc., has a plant in operation at Long Lake, and the Tide Water-Seaboard partnership has a unit at Cayuga. American Liberty is now installing a unit just north of Grapeland in the rich gas-distillate area.

There are two gas-distillate wells on the Focke tract. The wells underwent flow tests under Railroad Commission supervision several months ago to determine the feasibility of stripping the field and returning the dry gas into the Woodbine sand under pressure.

Liquefied Petroleum Gas Meeting at Oklahoma City

The seventh annual meeting of the Liquefied Petroleum Gas Association was held at Oklahoma City, February 21 to 23. Papers were presented on marketing of butane and propane. There was a display of equipment and appliances. A visit was made to the Oklahoma City oil field and a large plant in the field which produces propane and butane.

Pipe Line News

Turner Valley Line to Lakes Now Being Discussed

OTTAWA, Ontario.—R. A. Brown, Sr., of Calgary, Alberta, head of the Brown-Moyer-Brown group in Turner Valley, arrived here on his return from England, and has been conferring with federal officials and geologists with reference to wider market for Turner Valley crude. N. E. Tanner, minister of lands and mines for Alberta, also conferred with Dr. G. S. Hume, of the Geological Survey, and other officials.

Mr. Brown forecast, as a result of his negotiations in the United Kingdom, the probable starting this year of a pipe line from the Turner Valley field to the head of the lakes, estimated to cost between $15,000,000 and $25,000,000, and designed to serve refineries in eastern Canada. The line is dependent on the assurance of a minimum daily production of 25,000 bbls. for a 10-year period.

A pipe line from Turner Valley to the Pacific Coast is possible later, with the British Admiralty and Government assisting in the project as a defense measure.

Corpus Christi-La Rosa Line Survey Completed

HOUSTON, Tex.—Survey for a 37-mile 6-inch welded oil line connecting the newly opened Melon Creek and La Rosa fields in Refugio County with terminal facilities at Corpus Christi was completed last week and construction of the line is expected to be started soon. The line will be laid by Corpus Rosa Pipe Line Co.

Refinery Expansion

Changes Made at Atlas Refinery

After making changes, a series of trial runs will be conducted at the Jewella refinery of the Atlas Oil Corp., beginning next week, according to R. E. Meineit, formerly of El Dorado, Ark., recently elected president of the company. The runs will continue 10 or 15 days, it was reported. The plant has been shut down since January 21. The Lion Oil Refining Co., of El Dorado, for some time has held an option to purchase the controlling stock of the Atlas company. This has not yet been exercised, according to Lion officials.

Bell Increases Holdings In Ben Franklin Co.

Dr. Sidney Born, Tulsa, president, and W. C. Berry, Kansas City, Mo., vice president, of the Ben Franklin Refining Co., of Tulsa and Ardmore, Okla., announced that they had sold their interest in the Ardmore refinery to the Bell Oil & Gas Co. of Tulsa, for unannounced considerations. The two men had worked closely together in the taking over and rebuilding of the old Wirt Franklin Petroleum Corp. plant at Ardmore, and of arranging for it a supply of crude oil from southern Oklahoma stripper areas.

Universities Sponsor Midwest Power Conference

According to announcement by Dr. L. E. Grinter, dean of the graduate division and director of the department of civil engineering at Armour Institute of Technology, the institute, in cooperation with seven middle western universities and colleges, is sponsoring the annual Midwest Power Conference to be held in Chicago, April 5-7, in the Palmer House Hotel. Doctor Grinter is director of the conference.

Construction Started For Brandon Refinery

CALGARY, Alberta.—Anglo-Canadian Oil Co. is starting construction at the Brandon, Manitoba, Central Refinery plant of a $250,000 cracking plant, which will increase its refining capacity from 750 to 2,500 bbls. a day. It is planned to operate the plant entirely on Turner Valley crude, production from wells drilled by the Anglo-Canadian and associate and subsidiary companies being available for shipment.

Two 80,000-bbl. storage tanks are being installed at the Brandon plant to insure an adequate reserve sufficient to run the plant to capacity for approximately three months.

Application has been made by the Alberta Petroleum Association in behalf of the company for extension of the special rate on crude from Calgary to Regina, of 19 cents per hundredweight, to apply to shipments from Regina to Brandon, to facilitate increased shipments from Turner Valley to the Brandon plant. In the event that this rate should not be granted, the Anglo-Canadian company is considering putting on a fleet of tank trucks hauling crude as far as Brandon and supplying the smaller Saskatchewan refineries.

The Brandon plant has, heretofore, been running about 550 bbls. a day. R. J. Christian, plant manager, has been in Chicago arranging for shipment of the new cracking units.

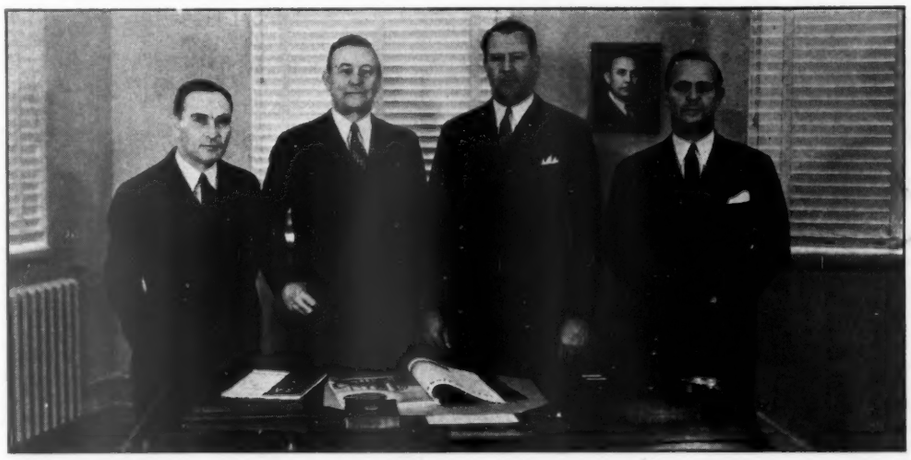
Construction Scheduled For New Levelland Refinery

Work has been scheduled to start for the new 4,000-bbl. refinery to be built at Levelland in Hockley County, Texas. The plant will be built by the Motor Fuels Corp., Fort Worth, at an approximate cost of $200,000. At the same time a separate corporation, Plains Pipe Line Co., will build a carrier system to serve the new plant. The refinery will include a cracking unit with 1,600 bbls. daily capacity. It will process gasoline, kerosene, tractor fuel, and fuel oils for which a market is being developed by W. D. Richardson, former vice president of Cosden Petroleum, who will head the sales organization.

Natural Gas

Appalachian Gas Measurement Short Course Date

R. S. Reed, Jr., has been appointed chairman of the publicity committee of the Appalachian Gas Measurement Short Course as conducted at the University of West Virginia under the sponsorship of the university and the Public Service Commission of West Virginia. He announces that the proceedings of the first annual Appalachian Gas Measurement Short Course have been printed in book form and are now ready for distribution. The school, the first of its kind in the eastern United States and the third in the country at large, was held August 22, 23 and 24, 1938, at the University of West Virginia with H. J. Wagner of the Public Service Commission serving as chairman of the meter school committee. Over 300 representatives from the utilities, manufacturers and gas producers in 12 states attended. The success of the first ıool was gratifying to the sponsors who have announced dates of August 21, 22 and 23 for this year's meeting. The proceedings of the 1938 meeting covers papers read and discussed on the general theme "Theory and Practice of the Measurement of Gases."



Permitting inspection of its enlarged motor fuel testing facilities in Tulsa the Ethyl Gasoline Corp. was host Saturday to 70 refinery and marketing executives. T. E. Ronan, division manager, appears at the left; then W. E. Webb, president; J. C. Taylor, vice president, and W. H. Kaley, sales manager

Loring L. Tonkin Chosen Hope Natural Head

Loring L. Tonkin of Clarksburg, W. Va., has been named president and general manager of Hope Natural Gas Co. of West Virginia, succeeding Howell C. Cooper. Mr. Tonkin was vice president and superintendent. J. C. Chisler was named vice president and treasurer.

North Texas Association Holds Annual Meeting

WICHITA FALLS, Tex., Feb. 25.—The North Texas Oil and Gas Association annual meeting here tonight was closed by announcement by E. O. Thompson, of the Railroad Commission, that pipe lines would begin running the full allowable from K.M.A. oil wells beginning Monday.

"The trouble with this country today is that we have too much regulation," Colonel Thompson asserted. "The oil industry can pull itself out of regulation, instead of getting deeper into it. Regulation cannot take the place of good management. I have contended all along that business statesmanship within the oil industry can solve any problem which confronts it. All these schemes for planned economy and planned living will get us nowhere. We are not a regimented people.

"I think each state has the right to run its own business as it sees fit. State sovereignty is worth more than perfection in the oil and gas ratio."

Colonel Thompson announced that the governor of Louisiana had agreed to attend the next oil compact conference and that the governor of Arkansas also is expected to join. It was hoped to have the compact meet in Austin March 15 at the same time as the next statewide conference on proration.

Harold B. Fell, Ardmore, Okla., executive vice president of the Independent Petroleum Association of America, paid high tribute to the North Texas Oil and Gas Association as one of the outstanding groups in the United States and concluded with a warning that "any policies made in the heat of passion, resulting from some unjust treatment, are liable to be unsound and react unfavorably.

"There is too much criticism of regulatory and legislative bodies. They want to do what is right. If you show, and convince them, what is right, they will go along with you."

Wirt Franklin, of Oklahoma, expressed his gratitude for the staunch support he always had received from the North Texas association.

Colonel Thompson was introduced by W. B. Hamilton. Merrill Blair was master of ceremonies. President P. F. Gwynn gave a short address of welcome.

I.P.A.A. Tenth Convention Set for Fort Worth

Fort Worth, Tex., where the first general meeting of the Independent Petroleum Association of America was held, will be the site of the tenth annual convention, October 18, 19 and 20, it was announced by C. E. Buchner, executive manager, Tulsa.

Magnetic Storm

The Tucson, Ariz., station of the U. S. Coast and Geodetic Survey reports a severe magnetic storm began at 11 a.m., February 24, and ended at 6 p.m. February 25, central standard time.

4 Per Cent Gain in Gasoline Demand During March

The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the market demand in March, 1939, is 3,340,000 bbls. This is 120,000 bbls. (4 per cent) more than the estimate for February and slightly more than the actual demand for domestic crude in March, 1938. During the past three months, with due allowance for unusually favorable weather conditions, a sharp upward trend is shown in gasoline demand. Improved industrial operations, coupled with low prices, has resulted in a recovery in the demand for residual fuel oils well ahead of the corresponding period in 1938 and even above the 1937 levels. However, due to recent increases in refinery runs, seasonal gasoline and fuel inventories are still considerably higher than necessary and indicate the desirability of conservative refinery operations throughout March.

Daily average crude-oil production and runs to stills during the five weeks January 1 to February 4 were 3,300,000 and 3,230,000 bbls. respectively. During this period total crude oil stocks (including heavy crude in California) declined 876,000 bbls. Foreign stocks, however, increased 242,000 bbls. during this period, making the decline in domestic stocks 1,118,000 bbls. The daily average of this figure (32,000), added to the production, gives 3,332,000 bbls. as the apparent daily average demand for January, compared with 3,270,600 bbls. estimated by the bureau. The difference of 61,000 bbls. reflects excess crude runs, which in turn resulted in over-accelerating the growth of inventories of gasoline.

ESTIMATED DAILY AVERAGE CRUDE-OIL DEMAND BY STATES

(Barrels)

(As no changes in crude-oil stocks are involved in these estimates, they represent demand rather than production)

State—	Forecast March, 1939	Forecast Feb., 1939	Actual demand March, 1938
Texas	1,363,900	1,297,500	1,294,000
California	588,400	580,000	691,000
Oklahoma	473,200	482,500	516,000
Louisiana	259,700	246,800	248,000
Kansas	150,300	148,600	171,000
Illinois	125,500	102,500	39,000
New Mexico	109,700	99,600	115,000
Wyoming	53,600	57,100	49,000
Arkansas	50,000	48,200	49,000
Michigan	47,700	47,200	47,000
Pennsylvania	45,100	43,200	44,000
Kentucky	17,700	17,100	14,000
New York	14,800	12,100	16,000
Montana	13,500	12,100	13,000
West Virginia	10,000	10,000	10,000
Ohio	9,800	9,000	9,000
Colorado	4,200	3,600	4,000
Indiana	2,900	2,900	2,000
Total	3,340,000	3,220,000	3,331,000

Motor Fuel

Domestic demand.—Motor-fuel demand is estimated as 42,950,000 bbls., or 4 per cent over the high demand of March, 1938, when sales were stimulated by a pending increase in freight rates.

Exports.—Motor-fuel exports, based upon forecasts of exporters, have been estimated as 4,000,000 bbls., making a total demand for motor fuel of 46,950,000 bbls.

Stocks.—Stocks of finished and unfinished gasoline on December 31 totaled 71,680,000 bbls. According to statistics of the American Petroleum Institute, these stocks increased about 6,500,000 bbls. during January bringing them to approximately 78,000,000 bbls. as of January 31. The bureau's estimated increase for February of 4,500,000 bbls. was expected to be fully realized and bring gasoline stocks to a minimum of 82,500,000 bbls. as of February 28. Believing that these stocks, agumented by current production, will be sufficient to meet motor fuel requirements this summer, the bureau has estimated no increase in gasoline stocks during March.

Gasoline production.—Benzol and direct sales and losses of natural gasoline have been estimated at 1,150,000 bbls., making refinery production 45,800,000 bbls. This is distributed among the various districts as follows (thousands of barrels): East Coast 1,600, Indiana-Illinois 8,120, Oklahoma 2,970, Kansas-Missouri 2,320, Texas Inland 3,250, Texas Gulf Coast 11,760, Louisiana Gulf Coast 1,390, North Louisiana-Arkansas 890, Rocky Mountain 1,190, California 6,360.

Crude Petroleum

Runs to stills.—Natural-gasoline consumption at refineries in March is estimated as 6.2 per cent of the total production, or 2,840,000 bbls. The yield of straightrun and cracked gasoline is estimated as 44.0 per cent. The application of this yield to the straightrun and cracked production of 42,960,000 bbls. gives crude runs of 97,640,000 bbls., or 3,149,700 bbls. daily. Foreign crude runs are estimated at 2,200,000 bbls.

Exports, fuel, and losses.—March crude-oil exports are estimated at 6,000,000 bbls., while crude used as fuel is estimated at 2,100,000 bbls.

Total demand.—The total demand for domestic crude in March, 1939, as indicated by the estimates above, is 103,540,000 bbls. or 3,340,000 bbls. daily.

Crude-oil demand by states.—The breakdown of the total estimated daily demand for domestic crude oil of 3,340,000 bbls. gives the following crude requirements by states of origin. As these requirements may be supplied either from stocks or from new production, contemplated withdrawals from crude-oil stocks must be deducted from the bureau's estimate of demand to determine the amount of new crude to be produced.

Conferences Being Continued In Mid-Continent Strike

Although a number of conferences were held during the week by J. C. Denton, vice president and general counsel for Mid-Continent Petroleum Corp., and J. C. Cooper, conciliator for the U. S. Department of Labor, these have been merely preliminaries which might lead to a resumption of negotiations. No discussions were being conducted by the company and the Oil Workers' Union (C.I.O. affiliate).

Governor Leon C. Phillips, of Oklahoma, stated at the end of last week it would be necessary for him to take a hand unless an adjustment comes soon. He would either send a new group of personal investigators to Tulsa or ask the legislature to make an investigation. One factor is the refusal of the school bloc in the Oklahoma Legislature to allow an appropriation of $25,000 for maintaining the National Guard detachment on strike duty until a bill in which they are interested is reported by the appropriations committee.

The principal issue, at this stage, is the disposition of the cases of the strikers discharged by the company; 130 were employed in Tulsa; 95 elsewhere. Mr. Denton said the company will not reemploy sitdowners but there is a place in the refinery and the field for other union members not guilty of law violation. He said the decision of the U. S. Supreme Court in the Fansteel Metallurgical Corp. case confirms the position taken by the company.

A comparatively quiet week was broken by one 24-hour wave of vandalism in which the telephone system was damaged at three points, a pipe line was dynamited with a loss of 1,000 bbls. reported, and houses of workers were stoned. Although there is nothing definite to justify optimism, continuation of efforts to bring a settlement gives encouragement.

Obituaries

ROBERT C. BARNWELL, 61, oil operator of Gilmer, Tex., died last week.

G. E. LAMB, 57, of the oil drilling firm of Kirkpatrick & Lamb, of Big Spring, Tex., died last week.

FRED E. KEY, 70, manufacturer of power plant and oil refinery equipment, died February 26 in St. Louis, Mo. He founded the company bearing his name in 1916, and was widely known for more than 30 inventions for power plant and refinery equipment.

BENJAMIN J. STRANAHAN, 72, died recently at Robinson, Ill. Born at Union City, Pa., he began at 16 on a lease near Derrick City, Pa., and was identified with developments in Pennsylvania, central and northwestern Ohio, Indiana and Illinois. He had been an active producer in Illinois since 1906.

Best Type of Safety Meeting Council Topic at Tulsa

The best type of employe meeting to promote safety was the round-table topic of the Petroleum Safety Council in Tulsa February 27. About 25 members, representing companies in the Mid-Continent, attended the meeting presided over by H. T. Markee, Phillips Petroleum Co., Bartlesville. Hadley Myers, Sinclair Prairie Oil Co., Tulsa, is secretary.

The discussion was led by J. C. McCamey, safety engineer, Carter Oil Co. A questionnaire is to be sent to members to determine the most successful type of meeting, whether it should be on company or employe time, and whether entertainment should be furnished.

Marketing Code Conference Held in Washington

WASHINGTON, D. C.—The rules of fair practice for the marketing branch of the petroleum industry were discussed in a conference with the director of fair trade practice conferences of the Federal Trade Commission, George McCorkle, and his assistant, Henry Miller, had with C. E. Arnott of Socony-Vacuum Corp. and Paul E. Hadlick, National Oil Marketers Association, members of the marketing code committee. The third member, Wilmer R. Schuh of the National Association of Petroleum Retailers, was absent.

THE MARKETS*

CRUDE OIL: *No price changes.*

REFINERY: *Heavy fuel oils weak at most points. No price reductions in gasolines reported and market is slightly stronger in several refining centers. Natural gasolines unchanged. Strength in lubricants centers in Pennsylvania grades.*

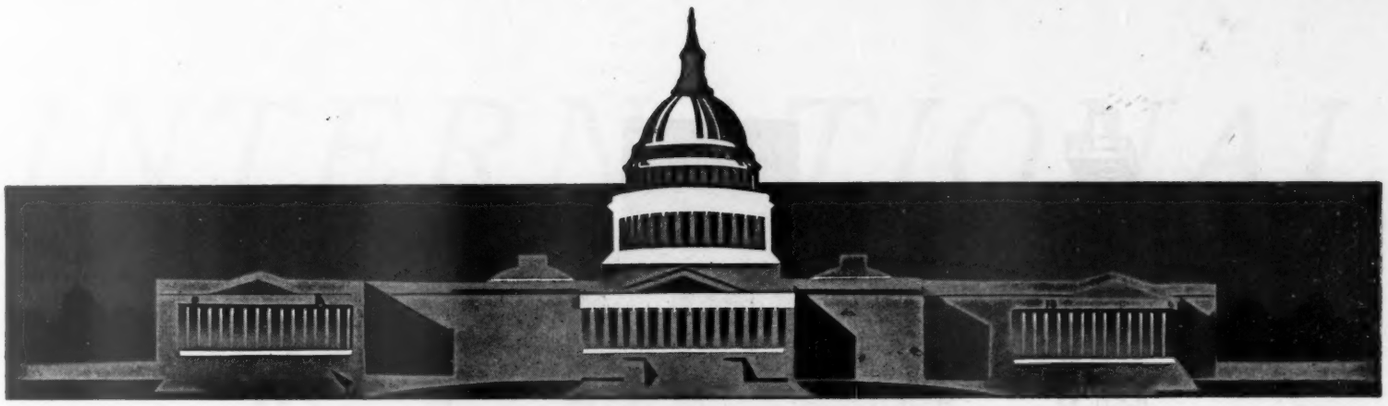
TANK-WAGON AND POSTED DEALER: *No important changes.*

FINANCIAL: *Oil stocks inactive with no important changes in quotations. Average of 30 representative stocks for week ending February 25: High, 27.75; low, 26.85; close, 27.37. Week ending February 18: High, 27.73; low, 27.03; close, 27.42.*

ANNUAL REPORTS

	Net income	Earned per share
Standard Oil of Kentucky:		
1938	$3,779,706	$1.45
1937	4,182,900	1.60
Buckeye Pipe Line Co.:		
1938	471,994	2.36
1937	803,670	4.02
New York Transit:		
1938	15,592	.16
1937	48,985	.49
Houston Oil Co.:		
1938	1,448,813	.83
1937	1,574,327	.95
Kirby Petroleum:		
1938	70,874	.14
1937	86,677	.17
South West Pennsylvania Pipe Lines:		
1938	‡14,273	‡.41
1937	33,321	.95
Eureka Pipe Line:		
1938	‡18,651	‡.37
1937	‡5,848	‡.12
Southern Pipe Line:		
1938	‡26,907	‡.27
1937	84,839	.85
Texas Gulf Producing:		
1938	766,000	.86
1937	604,585	.68
Lion Oil Refining:		
1938	912,482	2.10
1937	945,334	2.17
South Penn Oil Co.:		
1938	1,441,817	1.44
1937	4,643,265	4.64

*Additional information in Market Section.
†Furnished by Carl H. Pforzheimer & Co., New York.
‡Deficit or loss.



Seizure of Submerged Lands Is Threat to Oil Industry

By HENRY D. RALPH

WASHINGTON, D. C., Feb. 27.—Congressional lines are forming for a showdown fight over title to petroleum deposits underlying coastal waters, and the opening guns will be fired March 22 when the House judiciary committee begins hearings on two bills introduced last week.

The Navy Department is making a determined effort to gain control over coastal oil deposits, particularly in California, while California interests are rallying to fight the proposal and attempting to enlist support from all maritime states.

Recent developments are: (1) The energy resources report by the National Resources Committee recommending the federal Government claim ownership to submerged lands; (2) a letter to Congress from the Navy Department asking immediate legislation to obtain title to oil off the California coast; (3) introduction of the Hobbs bill to accomplish the Navy's recommendation; (4) introduction in the House of a resolution identical with the Nye resolution in the Senate; (5) scheduling of hearings before the House judiciary committee March 22.

The Hobbs resolution (H. J. Res. 176) was introduced on the same day the Navy made its request by Representative Sam Hobbs of Alabama, who last year led the fight for such legislation when the judiciary committee reported an amended form of the Nye resolution which had passed the Senate, but subsequently failed to receive action in the House. The O'Connor resolution (H. J. Res. 181) was introduced by Representative James F. O'Connor of Montana and is identical with Senate Joint Resolution 24 introduced on the opening day by Senator Gerald P. Nye of North Dakota. The Hobbs resolution would create a naval petroleum reserve comprising all deposits off the coast of California, while the O'Connor and Nye resolutions would assert federal title to all submerged coastal lands as well as underlying petroleum deposits bordering on any state. The proposals are identical, however, in their attempt to claim federal ownership of lands heretofore considered the property of adjacent states, and in that they would direct the attorney general to bring suits to eject all "trespassers" from the submerged lands.

The leader against this proposal is John H. Tolan of Oakland, Calif., chairman of the California delegation in Congress and a member of the judiciary committee. He has behind him the entire California delegation and is receiving support from members from other states, as enactment of either resolution, even the Hobbs resolution, applying only to California, would throw a serious cloud over the title to all other submerged lands, whether or not containing petroleum deposits, and might seriously interfere with the operations of port authorities, harbor commissions, dock companies, and structures extending below the low-tide mark.

Ever since the adoption of the Constitution, coastal states have assumed the title to the ocean floor out to the 3-mile limit, and hundreds of millions have been spent based on this assumption.

It has been no secret that the Navy Department was anxious to obtain control over California coastal oil deposits, but the first official endorsement came two weeks ago when the president submitted to Congress, with his approval, the energy report of the National Resources Committee, which included the following statement:

"Unfortunate Error"

Another problem affecting petroleum reserves which merits attention here is that of national policy toward ownership of petroleum and natural gas lying beneath the submerged areas off the coast of the United States between the low-water mark and the 3-mile limit. Unsettled questions of law are involved, but the very existence of doubt offers an opportunity for the bold assertion of the national interest in any petroleum or natural gas reserves that may be found beneath these areas. It is one of the unfortunate errors of our national development that early in our history the public ownership of all subsurface mineral wealth was not declared; such a step would have been so simple at an early stage and would have meant so much in terms of conservation, and it would be so complex and costly at this stage—not to speak of the wastes of irreplaceable resources that have already taken place. But here and now in 1939 we have one last opportunity to take steps which will reserve to the nation petroleum deposits that may be of considerable extent. In the third session of the Seventy-fifth Congress a joint resolution asserting the Government's rights to these deposits and setting them aside as a naval petroleum reserve, was introduced, passed by the Senate, reported with amendments by the House committee on the judiciary, and committed to the committee of the whole house. No final action was taken, owing doubtless to the pressure of other matters and to the early adjournment of the Congress. It is recommended that the substance of this resolution again be presented to the Congress. At this stage in our history it is sheer folly to overlook any opportunity for safeguarding the national interest in petroleum reserves.

Three days later, the acting secretary of the Navy, Charles Edison, submitted a draft of the resolution immediately introduced by Congressman Hobbs declaring it essential to national defense that Congress stop the exploitation of submarine oil fields in California and create of them a naval petroleum reserve.

In this letter the department declared:

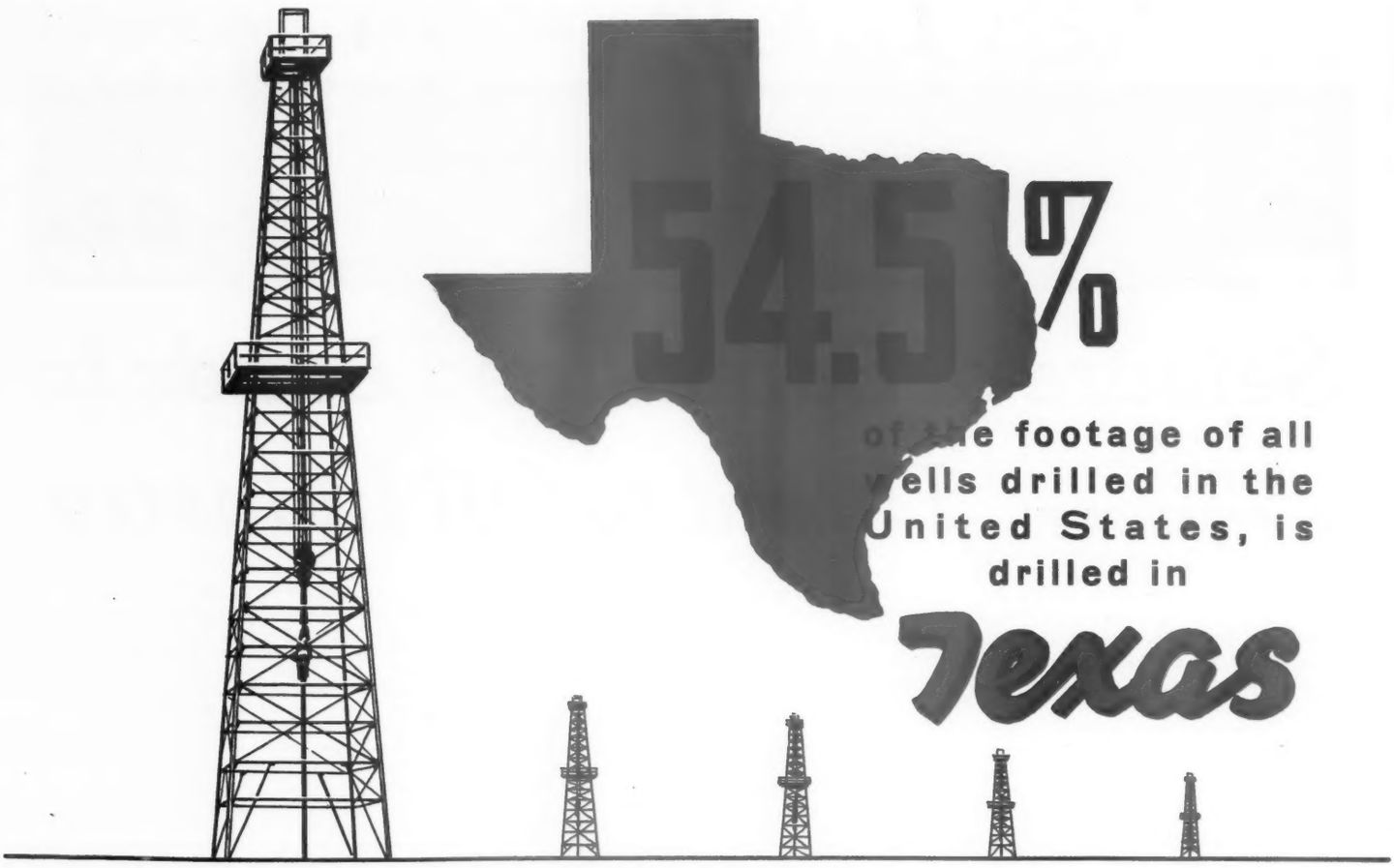
The conservation of such petroleum deposits is essential because the United States needs oil vitally. . . . Serious depletion of the oil in these petroleum deposits is now taking place. Recently the State of California and the city of Long Beach, have let two contracts which call for the drilling of at least 177 wells at Huntington Beach and at Long Beach—the two largest known submerged fields. These wells will be sunk on shore, whipstocked beneath the waters of the Pacific Ocean and bottomed in areas under consideration in the proposed joint resolution. Drilling of these wells has been started and will continue progressively until all are completed. None of this oil is needed at the present time and its production merely aggravates an existing overproduction situation. This drilling should be stopped, at least until it is determined by appropriate judicial proceedings just what rights the federal Government has in these oil deposits. These wells alone will produce millions of barrels of oil and will deplete the oil reserves to that extent.

Recent studies show that the production of petroleum in California is excessive, relative to the source of supply, and that the industry has expanded its markets without regard to reasonable conservation. A large percentage of the state's refined petroleum products is shipped abroad, an enormous proportion of which is going to establish emergency war supplies for foreign nations. To one nation alone nearly 30,000,000 bbls. of crude oil and refined products were shipped by the California oil industry during 1937; this quantity constituted nearly the entire shipment of the United States to that country and, furthermore, constituted over 40 per cent of the excess production of the state. This flow of petroleum products has continued in increasing volume during the current year.

During the past nine years the state's reserves have been depleted by nearly 20 per cent, due primarily to withdrawals in excess of actual normal needs, whereas the reserves of the nation outside of California have shown a pronounced increase. When this state of affairs is considered, it becomes a matter of extreme importance in connection with the national defense that the oil reserves in this area should be built up rather than seriously and irreparably depleted.

The Navy Department is powerless to act in the premises until there is authorizing legislation passed by the Congress.

When the hearings open March 22, California interests will be represented by state officials and experts who will contend there is no shadow of legal right in the government's claim to coastal lands, that ownership of submerged oil is not essential to national defense and conservation, and that as a matter of equity and justice nothing should be done to disturb the 150-year-old assumption that states have unquestioned ownership and control over submerged lands.



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INTERNATIONAL

Attention Focused on Conferences in Mexico City

The conferences scheduled between two representatives of the American oil companies and officials of Mexico are focusing interest on Mexico City where Donald R. Richberg, counsel for Standard Oil Co. of New Jersey and other American companies, and Patrick J. Hurley, legal representative of Consolidated Oil Corp., are due. One unconfirmed guess is the possibility of returning management of the properties to the owners along with 50 per cent interest in the production. Mexico would retain the other 50 per cent on which it would give a mortgage to the companies to be liquidated at periodical intervals. In default, the companies would be permitted to foreclose and regain title to the other half interest.

Press dispatches from Mexico insist President Cardenas has not retreated from his declaration that the nation would never relinquish possession of the oil resources. They also report American company representatives will present an unqualified demand that the properties be returned immediately, that indemnity be paid for production while under government management with payment for damages suffered by the equipment and properties. In this country such demands are regarded as propaganda.

The companies never officially indicated willingness to compromise. Recall of Ambassador Daniels was demanded in a resolution presented before the House in Washington by Representative M. J. Kennedy of New York.

Some of the markets previously supplied by Mexico have been recently captured by private companies. Consequently, the demand for Mexican petroleum is constantly undergoing greater pressure and this development may be a factor in potential settlement.

Second High Gravity Well Completed in Quiriquire Area

A second high-gravity oil producer has been completed by Standard Oil Co. of Venezuela in the Jusepin field, southwest of Quiriquire. The new well compares favorably with the discovery in that it registered initial flowing production of 700 bbls. per day through a three-eighths inch choke from total depth of 5,122 feet. The new Jusepin producer, the second in that field, is north of the discovery. Preparations are under way for further exploitation of the field.

Concern was expressed in New York offices over the increased royalty rate applicable to new concessions in Venezuela. The increase was provided in the new Venezuelan petroleum law which became effective January 6 by publication in an extraordinary issue of the official gazette. All provisions of the new law have not been fully analyzed, but the advance in royalty appears on first inspection to be one of the most important changes. The royalty participation of the government in production from new concessions—that is, concessions granted after enactment and effectiveness of the law—is increased to approximately 16 per cent compared to an average applicable to old concessions of about 11¾ per cent.

Companies operating in Venezuela have paid employes their extra compensation as provided in a December 17 decree, which provides for participation in net profits. For the larger concerns, the extra payment amounted to about 12½ per cent of the annual wage of each employe.

Cleaning out and redrilling part of the hole damaged by the blowout in December is under way on Standard Oil Co. of Venezuela No. 1 El Roble, a wildcat in eastern Venezuela on Pantepec acreage. When the blowout occurred the hole was bottomed at approximately 9,605 feet. Redrilling is proceeding at about 7,160 feet. The blowout developed between two strings of casing and the pressure originated at some point between 7,000 and 8,000 feet. The high-pressure gas was accompanied by oil, but estimates on the volume cover a broad range.

In the Oficina district, Mene Grande Oil Co. (Gulf) has completed four additional wells, is testing two and is drilling another. In the Santa Ana district, Mene Grande No. 2 is drilling at 7,700 feet and No. 3 at 6,700 feet. No. 1 San Joaquin is drilling at 5,375 feet; No. 2 is coring and reaming at 4,542 feet, and another wildcat, No. 1 Asceital, was abandoned at 8,282 feet. Standard of Venezuela abandoned No. 1 Indios at 4,288 feet in the Delta Amacuro district.

In what was described as a periodic examination of concessions, the Venezuelan Ministry of Fomento terminated contracts covering approximately 7,036,709 acres in a decree published in the Official Gazette January 27. Failure to carry out provisions of the concessions by 300 concessionaries were cited and the rights were returned to the government for future disposition. The land involves lies in several districts as follows:

District—	Acres cancelled
State of Anzoatequi	397,626
State of Apure	345,940
State of Barinas	2,119,624
State of Cuarico	864,850
State of Zulia	232,274
State of Portuguesa	1,359,050
State of Lara	296,520
State of Ocjedes	938,980
State of Sucre	370,650
State of Merida	37,065
State of Yaracuy	68,130

Concessionaries principally affected by the decree are: Apure Venezuelan Petroleum Corp., and Zamora Venezuelan Petroleum Corp., subsidiaries of Consoidated Oil Corp.; Venezuelan Pantepec Co., subsidiary of Pantepec Consolidated of Venezuela; California Petroleum Corp., of Venezuela, subsidiary of Standard of California; Central Venezuela Oil Corp.; Caracas Petroleum Corp., subsidiary of Societe Petroliere Francaise, and Cojedes Oil Fields Corp., a New York concern.

Official figures from the Minister of Fomento on 1938 production by companies and fields and on exports by companies have recently reached this country through American trade attaches at Caracas. They show an increase of 338,799 metric tons for 1938 over 1937, which at the average conversion factor of 6.795 bbls. of Venezuelan oil per ton, is approximately 2,302,139 bbls.

The relative position of fields shows some interesting changes, particularly in the upper and lower brackets. The Lagunillas field, in the Lake Maracaibo district, slumped at a rapid rate dwindling from 1937 output of 14,460,367 tons to 9,959,821 tons in 1938, a drop of 4,500,546 tons or more than 30,000,000 bbls. for the year. The increase of 4,924,600 tons in output of Tia Juana more than offset the decline in Lagunillas. Slight declines were shown in Quiriquire, Cabimas (La Rosa) and Mene Grande.

Five new fields appeared for the first time in the 1938 summary. They are: Bachaquero, Hato, Oficina, Yopales and Jusepin. All new fields, except Bachaquero, are in eastern Venezuela and are indicative of the intense exploratory campaign of five years' duration in that section.

The figures follow:

VENEZUELAN PRODUCTION

(Figures in metric tons*)

	1938	1937
By companies—		
Venezuelan Oil Concessions	8,783,541	7,576,860
Lago Petroleum Corp.	7,864,761	9,002,405
Standard Oil Co. of Venezula	4,399,113	4,401,961
Mene Grande Oil Co.	4,394,180	3,950,601
Caribbean Petroleum Co.	1,813,836	2,122,615
Colon Development Co.	712,256	581,428
British Controlled Oilfields	69,296	96,626
Central Area Exp. Co.	19,027	4,967
Compania de Petroleo Lago	15,360	1,108
Total	28,071,370	27,732,571
By fields—		
Lagunillas	9,959,821	14,460,367
Tia Juana	6,601,100	1,676,500
Quiriquire	3,778,496	3,880,841
Cabimas	3,743,673	4,192,816
Mene Grande	1,813,836	2,122,615
El Cubo	712,256	581,428
Cumarebo	323,059	317,823
Pedernales	281,212	199,851
Temblador	201,385	8,154
Bachaquero	144,102	.....
La Concepcion	123,470	138,512
La Paz	122,975	46,277
Hato	116,897	.....
El Mene	69,296	91,734
Anzoatequi	39,741	7,241
Hombre Pintado	19,027	4,967
Las Palmas	8,648	146
Yabo	4,678	728
Oficina	4,678	.....
Yopales	1,333	.....
Tabasco	1,666	2,571
Jusepin	522	.....
Total	28,071,371	27,732,571
Exports by companies—		
Venezuelan Oil Concessions	8,687,978	7,412,837
Lago Petroleum Corp.	†7,430,354	‡8,355,933
Mene Grande Oil Co.	4,422,552	3,052,852
Standard Oil Co. of Venezuela	4,182,192	4,084,808
Caribbean Petroleum Co.	1,150,998	1,498,333
Colon Development Co.	698,299	581,102
British Controlled Oilfields	70,811	87,568
Total	26,643,184	25,073,433

*Conversion factor 6.795 bbls. per ton average. †Includes 16,925 tons of natural gasoline. ‡Includes 18,006 tons of natural gasoline.

ELLIOTT ROOSEVELT

Federal Control Within a Year Unless States Solve Problem

By ELLIOTT ROOSEVELT

A few weeks ago, during a visit to Washington to inquire into the many national problems affecting Texas, I made it a point to confer with various government officials on the oil situation. The consensus, which I reported to you upon my return, was that the petroleum industry would be given another year in which to solve its problems of production control and physical waste. If it cannot reach a solution within that time the Government, I was given to understand, is prepared to step in and salvage the situation by federal control.

This was no new pronouncement given to me that I might capitalize on a news "break." It is an old story. Certain department heads in Washington long have advocated government control of the oil industry. In the past—except during the era of the National Industrial Recovery Administration, when the industry actually was under federal regulation—the threat of government control has been used as a "big stick" to whip the oil industrialists into line. During these times of international stress, however—with nations across the seas either locked in war or engaged in an armaments race for the eventuality of war—the threat has become very real. The Government, I was told quite pointedly, has quit yelling "wolf" to the oil men. It regards oil as a basic natural resource important as a material of war, and under that theory is willing and ready to act if action is considered necessary.

The government leaders with whom I talked in Washington were in almost unanimous agreement that a strengthened interstate oil compact, joined by all producing states and with each state cooperating in a voluntary proration arrangement, would be the most logical medium for solving the industry's problems. A few months ago such a cooperative effort seemed not only possible, but very probable. Recent developments have made the probability somewhat more remote.

The State of Texas, due to its leadership among the nation's oil-producing states, can and must necessarily take the lead in ironing out the many interstate problems relative to the production of crude oil. With the reappointment of Ernest O. Thompson, chairman of the compact commission and member of the Texas Railroad Commission, as the Texas representative on the compact commission it is well equipped to do so.

Commissioner Thompson, who is, perhaps, the best informed man in the nation on the problems of the oil industry and their relationship to state and national government, frequently has urged strengthening of the interstate oil compact. Among its original members, the compact has been successful since its inception in the regulation of oil production. And recently the demand has been growing for the compact to assume the additional duties of regulating allocations to refineries. With production problems already pretty well under control, the regulation of crude runs to stills probably would solve the most trying situation now facing the industry.

Mr. Thompson, as a matter of fact, cited that problem as the "one fly in the ointment" of the entire oil situation in a statement issued at Austin the other day.

Mr. Thompson stated that the production end of the industry had kept remarkably within reasonable bounds, in spite of the fact that several states which have no regulatory conservation laws are producing wide open.

Stripped of its technical terms, the statement of Commissioner Thompson says that while conservation laws, centered around the interstate oil compact, have been successful in regulating production of oil, the oil refiners still refuse to cooperate; are making and storing gasoline far in excess of demand, which storage will likely result in depressing the market, and should, if they cannot solve the problem themselves, have laws passed that will solve it for them.

In summing up the attitudes of the various federal and state conservation authorities, it appears that all but a few would like to see developed a workable interstate oil compact—first to regulate production, and later, perhaps, to regulate refining. There are a few persons in federal Government who insist that the only solution of the production and refining problem is for the Government to take over regulation of the industry. Neither oil men, nor oil states, want to see that happen. But a few of the states refuse to cooperate in any self-regulatory program for fear that it would hinder development of the industry within those states.

Observers agree that all states must join in the conservation program if problems are to be adjusted. With a few of the states refusing to join, what is to be the outcome? A survey of eight of the major oil-producing states at midweek brought a wide variance of opinion as to the future of the present interstate compact, which reaches the end of its existence this September unless the participating states reratify it.

Of the four original compacting states—Texas, Oklahoma, Kansas, and New Mexico—all appear in favor of renewing. The fifth member, Illinois, likewise appears favorable toward rejoining, with the reservation, however, that it will not pass regulatory measures that will retard development of the state's oil fields. The three other states surveyed—California, Louisiana, and Michigan—all answered as vaguely as they have in the past.

Here are the answers given by newspaper men who conducted the survey in the various states, all having interrogated either state heads directly or sources close to the oil scenes in their respective states:

Illinois—Acting Governor John Stelle says that both he and Governor Horner have recommended rejoining the compact and that sentiment in its favor continues to grow. But since the oil men are opposed to any regulation that would curtail production, the state will join only with the reservation that no regulations be imposed that will hamper development of the state's new fields.

California—R. D. Bush, state gas and oil supervisor, explains that the situation is different in California due to the fact that producers in that state are not in stiff competition with Mid-Continent producers, whom the compact benefits. Operators are divided in opinion on legislation to control oil production.

Louisiana—Reliable sources say that Louisiana officially represents itself as willing to cooperate in any oil movement which seems reasonable.

Michigan — State Petroleum Engineer F. R. Frye says the compact matter has not been seriously considered, nor any decision made.

And there the oil picture stands. If the states, by individual efforts or through cooperation with one another, can put their house in order, fine! Once that is accomplished, the refining problem can be met and solved. The alternative at this time appears to be federal control—certainly no oil man—no oil state—can favor that alternative.

FEDERAL LAW NEEDED

(Continued from Page 13)

we dislike, have acquitted themselves with honor. We denounce the postmaster general, all postmaster generals, and yet our postal service is and will continue to be a marvel. The oil industry has implicit confidence in the Bureau of Mines, and its few remaining millionaires must look to the G-men when their children are kidnaped; but to hell with the Government if anything else is mentioned. We foregather and listen to speakers who regale us with the heroics by which federal regulation was averted, as though it were the deadly Upas. What does it all mean? Are we so hysterical that nothing can be appraised? Are we willing to be led by the nose, and to endure injustice and losses as the supposed price of averting federal regulation?

The truth is that we could afford to make substantial sacrifices to obtain federal regulation in this instance. Perhaps it is too much to hope that the industry will take stock and consider this question again. It has the Connally law, which is federal regulation to be sure, but the Connally law stops short of the practical need of the hour. It should be brought up to date and made complete by provisions under which the oil states are coordinated just as pool proration is coordinated in single states. And if this should have in it a flavor of valorization it would not be so strong as to be offensive even to the most fastidious.

No one should conclude that the writer proposes or considers necessary any kind of federal regulation except that specifically described and limited; and nothing here said should be construed as a reflection upon the honesty of purpose or effort of any opponent of federal regulation, particularly Commissioner Thompson. We have our differences of opinion. They are pronounced and deep seated. We can never agree, but when we are through talking we are friends.

Here is what to do

"A refiner wants to know what to do with stored products which collectively will not bring the price of the crude," says OIL AND GAS JOURNAL

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If it's straight-run gasoline or naphtha, Dubbs reform it

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Programs and Meetings

International Acetylene Association Program

Outstanding representatives of industry from all sections of the country will appear on the program of the thirty-ninth annual convention of the International Acetylene Association, according to announcement by the secretary. The meeting is to be held in Houston, Tex., on March 8, 9, and 10. Users and fabricators of metal products will find the program of interest, as it will include papers on developments of the oxy-acetylene welding and cutting processes. The tentative program follows:

Wednesday, March 8

Opening session, 12:15 p.m.—Address of welcome by J. W. Evans, vice president U. S. Chamber of Commerce, Houston; keynote address by J. H. Van Deventer, editor, the Iron Age; opening address by Elmer H. Smith, president of International Acetylene Association; followed by presentation of the Morehead medal.

First technical session group—two simultaneous meetings at 2:30 p.m.—Session A: "Welding and Cutting in Petroleum Refining." Chairman: R. L. Dudley, president, Gulf Publishing Co., Houston.

"Oxy-Acetylene Welding of Piping in Petroleum Refineries," Henry Jouette, Magnolia Petroleum Co., Beaumont, Tex.

"Welding Fittings," E. Hall Taylor, Taylor Forge & Pipe Works, Chicago.

"Oxy-Acetylene Welding of High Pressure Piping," A. N. Kugler, Air Reduction Sales Co., New York.

Session B: "Welding and Cutting in Petroleum Production and Distribution." Chairman: L. H. Courtwright, welding foreman, Reed Roller Bit Co., Houston, Tex.

"Gas Welded Oil Well Casings," G. R. Milton, Sinclair Prairie Oil Co., Arp, Tex.

"Review of Latest Practices in the Pipe Line Field," A. D. Greene, vice president, United Gas Pipe Line Co., Houston, Tex.

"Maintenance of Oil Field Equipment," C. G. Alhart, Texas Iron Works, Houston, Tex.

"Oxy-Acetylene Application of Hard-Facing Materials to Drill Bits," Charles H. Shapiro, chief metallurgist, Reed Roller Bit Co., Houston, Tex.

Thursday, March 9

Annual luncheon and business meeting, 12:15 p.m.

Address by George A. Hill, vice president, American Petroleum Institute; president, Houston Oil Co., Houston, Tex.

Reports of committees.

Election of officers.

Chairman: H. S. Smith, president, International Acetylene Association.

Second Technical Session, 2:30 p.m.—"Surface Hardening and Hard Surfacing," special lecture, followed by a panel discussion led by Chairman Dr. A. B. Kinzel, chief metallurgist, Union Carbide and Carbon Research Laboratories, Inc., New York.

"Surface Hardening and Hard Surfacing," C. E. MacQuigg, dean, College of Engineering Ohio State University.

Participants in the discussion will be John J. Crowe, research engineer, Air Reduction Sales Co., New York, and Ernest E. Thum, editor Metal Progress, Cleveland.

Round table discussion, 8:15 p.m.—

Short forum: Demonstration meeting followed by simultaneous group meetings for open discussion of practical problems of welding and cutting. General chairman: H. C. Boardman, president, American Welding Society; Chicago Bridge & Iron Co.

Demonstrations to be made of flame hardening, hard-facing, testing, and casing welding.

Subjects to be discussed are flame hardening, fire prevention and safety, nonferrous metals, alloy steels, hard-facing, testing of wells, oil-well casing welding, salvaging and reclamation, and safe-ending of boiler tubes.

Friday, March 10

Plant inspection trip, 8:15 a.m.—Hughes Tool Co. Houston, Tex.

Third technical session group, two simultaneous meetings, 2:30 p.m.

Session A: "Machine Oxy-Acetylene Cutting." Chairman: A. I. Sellers, superintendent of shops, Southern Pacific Railroad, Houston, Tex.

"Flame Cutting With Small Machines," Walter B. Van Wart, vice president, Wyatt Metal & Boiler Works, Dallas, Tex.

"Oxy-Acetylene Shape-Cutting of Drilling Equipment Parts," L. W. Stahl, Emsco Derrick & Equipment Co., Houston, Tex.

"Plate-Edge Preparation," J. H. Troger, Federal Shipbuilding & Dry Dock Corp., Kearny, N. J.

"Economics of Machine Gas Cutting," G. M. Deming, Air Reduction Sales Co., New York.

Session B, 2:30 p.m.—"General Applications of the Oxy-Acetylene Processes." Chairman to be announced.

"Plumbing, Heating and Air Conditioning," Frank Wallace, C. Wallace Plumbing Co., Dallas, Tex.

"Safe-Ending of Boiler Tubes," Frank Page, chief boiler inspector, State of California.

"Flame Hardening of Oil Field Equipment," M. O'Hara, International Derrick & Equipment Co., Beaumont, Tex.

"Agricultural Uses of Welding and Cutting," Mills P. Byron, agricultural experiment station, College Station, Tex.

National Motor Truck Show To Be Held in Chicago

After a meeting of the board of directors of the National Motor Truck Show, Inc., J. F. Winchester, president, announced that the 1939 sixth annual National Motor Truck Show, planned for Navy Pier, Chicago, from November 8 to 16, inclusive, with already approximately one-half the available space contracted for by leading automotive manufacturers, will be held during a period when several institutional and vocational activities will be conducting meetings in that city.

Illinois-Indiana Conference

The seventh annual petroleum conference of the Illinois-Indiana Petroleum Association has been scheduled for June 3 in Robinson, Ill.

CALENDAR

March

AMERICAN SOCIETY FOR TESTING MATERIALS, committee week and regional meeting, Deshler-Wallick Hotel, Columbus, Ohio, Mar. 6-10.

INTERNATIONAL ACETYLENE ASSOCIATION, 39th annual convention, Houston, Tex., Mar. 8-10.

WELDING CONFERENCE AND SHORT COURSE, University of Oklahoma, Norman, Okla., Mar. 9-10.

AMERICAN PETROLEUM INSTITUTE, spring meeting of Southwestern District Division of Production, Plaza Hotel, San Antonio, Tex., Mar. 16-17.

AMERICAN CHEMICAL SOCIETY OKLAHOMA SECTION, petroleum group, at Tulsa, March 18.

WESTERN PETROLEUM REFINERS ASSOCIATION, annual meeting, San Antonio, Tex., Plaza Hotel, Mar. 20-22.

SOCIETY OF EXPLORATION GEOPHYSICISTS, annual meeting (joint meeting with A.A.P.G. March 22), Oklahoma City, Huckins Hotel, March 21-23.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, 24th annual meeting, Skirvin Hotel, Oklahoma City, Okla., Mar. 22-24.

April

AMERICAN CHEMICAL SOCIETY, Baltimore, Md., April 3-7.

AMERICAN PETROLEUM INSTITUTE, spring meeting of eastern district, Division of Production, William Penn Hotel, Pittsburgh, Pa., April 4-5.

AMERICAN PETROLEUM INSTITUTE, spring meeting of Pacific Coast district, Division of Production, Biltmore Hotel, Los Angeles, Calif., April 11.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Hotel Cleveland, Cleveland, Ohio, April 13-14.

AMERICAN PETROLEUM INSTITUTE, Division of Production, Mid-Continent district, Skirvin Hotel, Oklahoma City, Okla., April 18-19.

OIL-WORLD EXPOSITION, Houston, Tex., April 24-29.

May

PETROLEUM ELECTRICAL SUPPLY ASSOCIATION AND PETROLEUM INDUSTRY ELECTRICAL ASSOCIATION, Rice Hotel, Houston, Tex., May 2-4.

NATURAL GASOLINE ASSOCIATION OF AMERICA, Hotel Tulsa, Tulsa, Okla., May 3-4-5.

AMERICAN PETROLEUM INSTITUTE, ninth midyear meeting, Roosevelt Hotel, New Orleans, La., May 15-18.

NATURAL GAS SECTION, A.G.A., annual meeting, Tulsa, May 8-11.

WORLD AUTOMOTIVE ENGINEERING CONGRESS, sponsored by S.A.E. for New York (May 22-26), Indianapolis (May 20), Detroit (May 31-June 2), San Francisco (June 6-8), May 22-June 8.

NATIONAL ASSOCIATION OF PURCHASING AGENTS, annual convention (Oil Company Buyers' Group), Fairmont Hotel, San Francisco, Calif., May 21-25.

June

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION, Hotel Hershey, Hershey, Pa., June 15-16.

THIRTEENTH INTERNATIONAL CONGRESS OF CARBIDE, ACETYLENE, OXYACETYLENE WELDING AND ALLIED INDUSTRIES, Munich, Germany, June 25-July 1.

August

MICHIGAN OIL AND GAS EXPOSITION, Mount Pleasant, Mich., Aug. 1-6.

ENGINEERING and OPERATING

In This Issue

MARCH 2, 1939

RICHFIELD OIL BUILDS $5,000,000 REFINERY AT WATSON, CALIF. ... *Page 36*

Following the reorganization of the Richfield Oil Corp. of California, it was decided to consolidate the manufacturing facilities of Richfield, Pan American and Rio Grande into one modern plant to be erected at Watson, Calif. Exacting engineering surveys were made in anticipation of the work, and the favorable results of this are clearly outlined to reveal that unusually little time was consumed in starting the plant. Subsequent operation has proved to be exceptionally dependable.

NEW METHOD OF OBTAINING POTENTIALS TRIED AT BEMIS, KANSAS

By Harry F. Simons ... *Page 49*

Operators of some Kansas pools realized that the open-flow method of taking potentials was forcing them to install heavier well equipment than was necessary for regular producing purposes. The Kansas Corporation Commission has approved the productivity-index method which gauges the well's ability to produce by measuring the fluid level at different rates of production. It was first tried on an entire pool at Bemis, in Ellis County, and the next field to be tested is the South Trapp pool in Barton County.

PENNSYLVANIA OIL PRODUCER OPERATES CENTRAL POWER PLANT

By J. P. O'Donnell ... *Page 52*

A general description is presented of the equipment used to generate electric power for a group of properties operated by one company. Power distribution and the manner in which the leases are produced are also dealt with in this discussion.

MOTOR OPERATES IN CO_2 ATMOSPHERE AS EXPLOSION PRECAUTION

By R. E. Johnson ... *Page 58*

Due to the high rate of oil charge going to the two combination units in the Richfield Oil Corp.'s new refinery at Watson, Calif., especially large pumps and motors had to be designed. In this special installation the motors operate in an atmosphere of carbon dioxide fed to the housing from a cylinder. An automatically controlled internal pressure of small magnitude is held on the motor housing.

OPERATING IDEAS ... *Page 55*

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...ield Refinery

General view of Richfield Oil Corp.'s new $5,000,000 refinery at Watson, Calif.

RICHFIELD OIL CORP. was reorganized in March, 1937, consolidating the assets and properties of the Richfield Oil Co. of California, Pan American Petroleum Co. and Rio Grande Oil Co. One of the first and most pressing problems confronting the new company was the modernization of its refining facilities. Richfield had three refineries, the Pan American plant at Watson, Richfield's refinery at Hynes, and the Rio Grande installation at Vinvale. Obviously it was uneconomic to operate three refineries in one area, yet no one refinery contained sufficient modern equipment to take care of the new company's needs. The Watson and Hynes refineries were operating with old equipment to which only urgent repairs had been made during the seven years prior to reorganization. The Rio Grande refinery at Vinvale had been modernized in 1934 and was equipped with up-to-date cracking facilities, but its capacity was not adequate to turn out the products required by the new company's sales program. The pressing question, then, was how to consolidate manufacturing operations of the company at one point to best advantage.

In the reorganization proceedings the new company had entered into a management agreement with the Sinclair Refining Co. under which Richfield could call upon Sinclair for engineering services. Consequently the Sinclair development department was requested to survey Richfield's existing facilities and make recommendations as to a proper solution of the refinery consolidation problem. In its study, several aspects of the problem were considered, and economic balances were prepared for each plan. The rehabilitation and operation of existing equipment was studied and rejected as economically and technically unsound. Not only would the higher cost of operating old equipment outweigh the resultant savings in capital investment, but products of the high quality demanded by the new organization could not be produced with the type of equipment available. Finally, after a detailed study of all the plans submitted the Richfield management decided to concentrate its manufacturing operations at the Watson location, keeping Vinvale intact for operation if and when required, and the expenditure of $5,000,000 on this program was authorized. This decision was made in May, 1937. Immediately thereafter design work was started and specifications were released to contractors for bid.

Contracts Awarded

On July 14, 1937, major contracts for the work were awarded. C. F. Braun & Co. of Alhambra received orders for the construction of two combination crude distillation and cracking units, a debutanizer, a stabilizer, a hydrogen sulfide removal plant, a polymerization plant, and a caustic wash unit. Other work included the revamping of an existing crude battery and the rehabilitation of the electrical and water systems. The Bechtel-McCone-Parsons Co. of Los Angeles was awarded the contract for rebuilding the gasoline rerun unit.

The construction site was cleared in August, and building actually began about the middle of September, 1937, when ground was broken and the first concrete was poured. In a construction program of this size it is extremely important to keep material and equipment moving in as required. This is difficult enough under the best circumstances but this job was further complicated by the heavy rains and resultant floods of the spring of 1938. The modern refinery uses equipment so large as to constitute a major transportation problem, and this was no exception. Seven evaporating and fractionating towers were required for each of the two combination units. The largest of these, the two main bubble towers, are 13 feet in diameter by 60 feet high and weigh 250,000 pounds each. Transporting these towers from the fabricating shops to the refinery site necessitated one-way traffic over the railroad, as the towers, when loaded on flatcars, would not clear passing cars on adjacent tracks. With these handicaps, some anticipated and some unexpect-

ed, the job moved slowly during the early spring and it appeared that the completion date of August 1 would be difficult to meet.

However, the job went ahead steadily. In June the rehabilitation of the electrical and water systems had been completed by the contractors, and the steam plant had been overhauled and modernized by the Watson refinery maintenance department. In July the rebuilt crude and rerun units were finished and turned over to the operators, who successfully put them into operation during the first part of the month. During this period the carefully picked men who were to operate the combination units for Richfield were given thorough training in their new duties. This included sending "key" men to Sinclair refineries to acquire actual operating experience with similar equipment. The men who were to operate the plant went over the unit each week during the final stages of construction, and became familiar with every engineering detail. Everything was done to prevent any possible slip-up in putting the big units "on the line."

Design and Construction

The entire installation represents one of the largest refinery construction projects executed on a single contract. The coordination of all phases of the construction—the manufacture of the major equipment, the field erection—was undertaken and completed by C. F. Braun & Co. The process design was provided by the Sinclair Refining Co. The working drawings were prepared by the Braun staff. The Sinclair and Richfield engineers worked jointly with Braun in the completion and settlement of design details.

The main plant is a double combination unit for topping and cracking, the two units operating in parallel. The total charge is 50,000 bbls. per day. The auxiliary units, installed concurrently, take care of debutanization, stabilization, hydrogen-sulfide removal, dehydration, depropanization, caustic washing, and catalytic polymerization. The new refinery water system cools and circulates 24,000 g.p.m., or 35,000,000 gallons daily.

Contrary to the common practice of doing much of the work in the field, this plant was largely shop fabricated. At the Braun plant all of the major refining equipment was manufactured, and some 10,000 units of piping and accessories were fabricated and tested. All of this was shipped to the site ready for field assembly. The field crew averaged less than 250 men.

There are throughout the plant 22 bubble columns and 110 heat exchangers, condensers, and coolers. The bubble columns range from 4 feet to 13 feet in diameter, and weigh from 60 to 140 tons each. Sections of the cracking columns operating above 600° F. are lined with 11 to 13 per cent chrome alloy, and are equipped with alloy bubblecaps and trays. High-temperature exchangers are similarly protected and are equipped with alloy tube bundles. All of the columns, exchanger shells, and pressure vessels are stress relieved.

E. W. ISOM, vice president in charge of research and development, who supervised the complete construction program

Delivery of equipment and materials to the field was coordinated with the planned erection schedule, so as to permit moving a majority of the work direct into position from cars or trucks, without rehandling.

The foundations and reinforced concrete buildings required some 7,000 cu. yd. of concrete, all 3,000-pound-test material. The main pump and receiving house, involving 800 yards, was poured in two stages: the lower floor, framework, and ceiling in a continuous pour, 580 yards in 21 hours; and the top floor and roof, 220 yards in seven hours. All large foundations and building structures were compacted by use of vibrating machines on the concrete. All concrete work and other structures were built with horizontal and vertical reinforcements for earthquake resistance.

The steel structures—furnaces, support steel, platforms, craneways—involve some 2,000 tons of steel work. Provision for earthquake resistance is included in each structure. Gantry cranes with traveling hoists are provided for the removal and handling of heat-exchanger heads, tube bundles, and condenser sections. Monorail hoists serve for the handling of furnace tubes and headers.

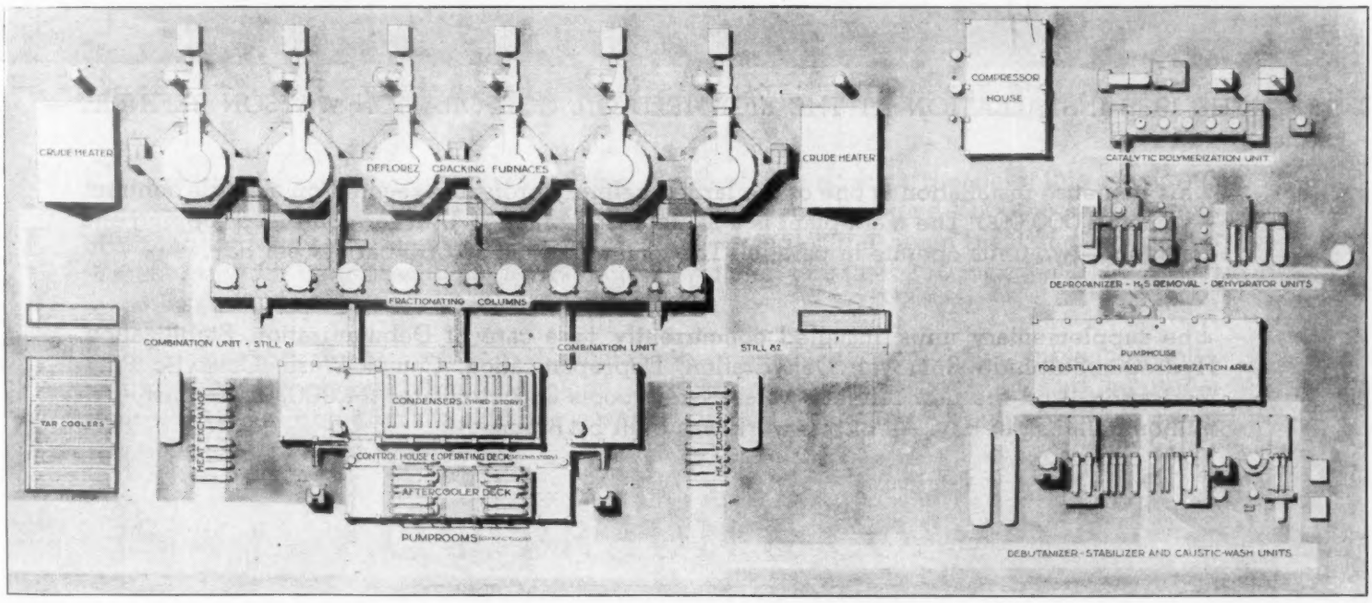
Modern construction equipment contributed to the fast completion schedule and to the economy of installation. A gallows frame and three heavy-duty hoists, suitable for vessels 15 feet in diameter and loads of 175 tons, were used for erection of the large bubble columns. Other rigging equipment included three traveling cranes, two riggers, hoist trucks, seven tugger hoists, and a stiff-leg derrick. Highlines, suspended from 110-foot gin poles and served with power hoists, were used for rigging piping and accessories into restricted areas.

Two spur tracks were installed to extend throughout the plant area in such location as to provide for convenient handling of the major equipment. The rigging facilities were arranged so that the large bubble columns were hoisted and placed on their support structures within one hour from the time the carloads were spotted in position. The columns were manufactured and shipped in planned order so that the rigging equipment could be moved in one direction in short steps, without backtracking. Most of the major equipment, and many of the accessories, were set in position direct from cars and trucks.

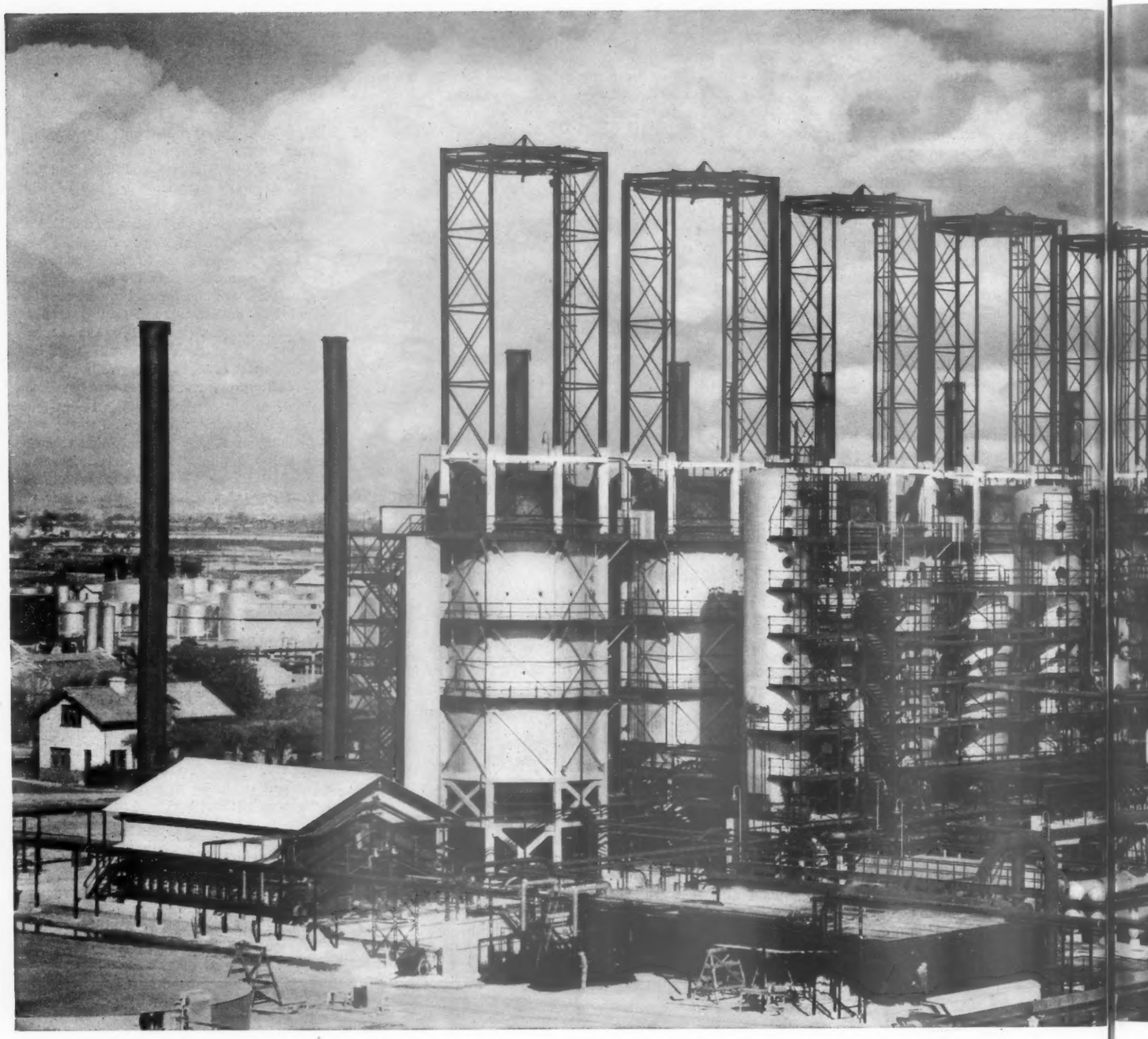
Process Lines

The process lines for temperatures 600° F. and higher were fabricated from alloy steel, and were provided with vanstoned flanged joints, so as to

(Continued on Page 40)



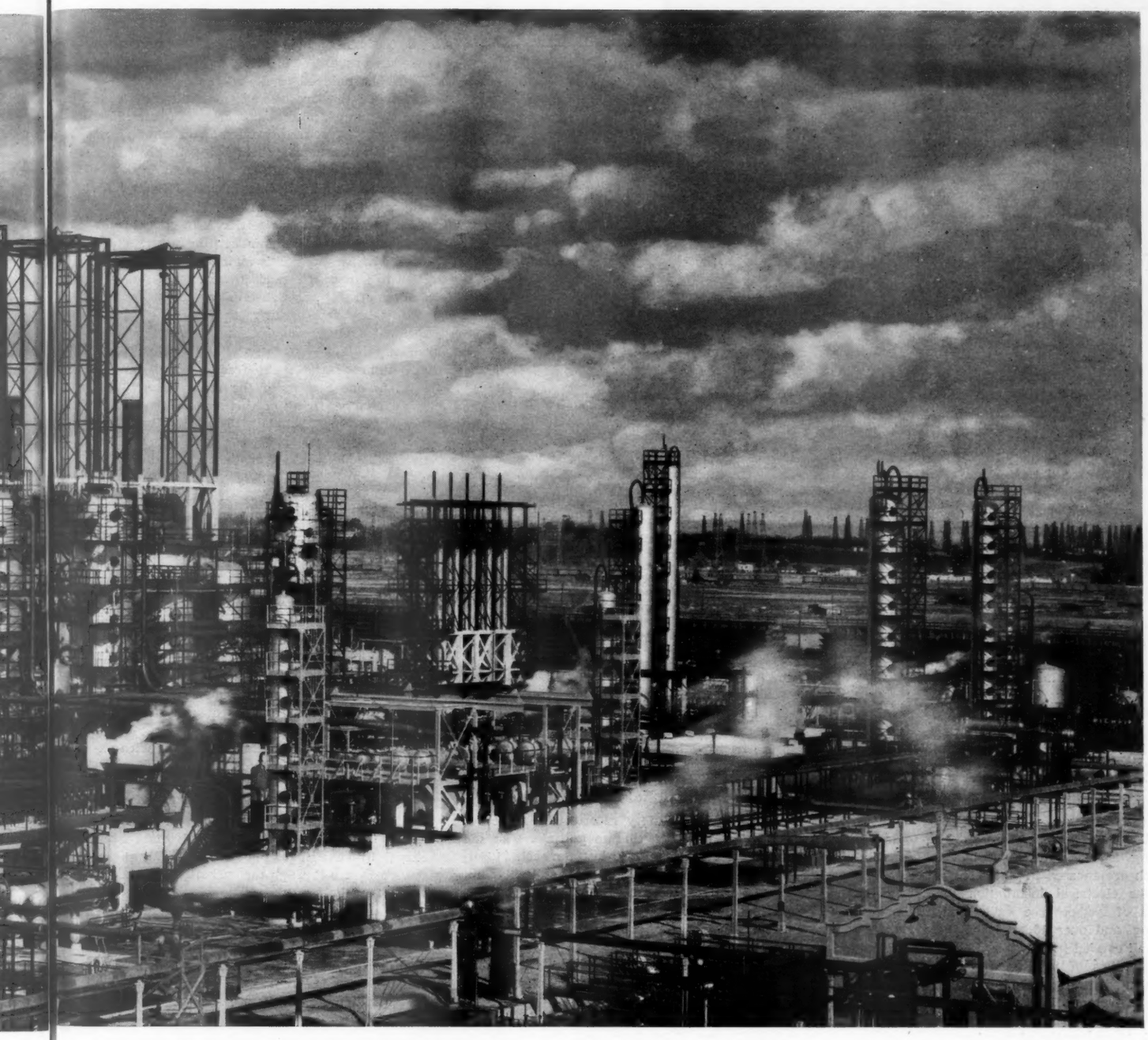
General layout of plant to show all major facilities



THE 1938 INSTALLATION AT THE RICHFIELD OIL CORPORATION WATSON REFINERY—

This immense installation is one of the largest refinery projects executed on a single contract, —some $5,000,000. The main-plant is a Double Combination Unit for combined topping and cracking,—two units operate in parallel. The total charge is 50,000 barrels per day.

The supplementary units, installed concurrently, take care of Debutanization, Stabilization, Hydrogen-Sulphide Removal, Dehydration, Depropanization, Caustic-Wash, Catalytic Polymerization. And the new refinery water-system cools and circulates 24,000 GPM—thirty-five million gallons per day. All of this work was built by Braun.



TWO MILES FROM LOS ANGELES HARBOR—SIGNAL HILL FIELD IN THE RIGHT BACKGROUND

Contrary to the common practice of doing much of the work in the field, this plant was largely shop-fabricated. All of the major refining equipment and some 10,000 complete units of piping and accessories, were manufactured and tested at the Braun plant and shipped to the site ready for field-assembly. The field-crew averaged less than 250 men.

Full-time capacity operation, followed immediately after construction. Both combination-units, and all the supplementary units, remained onstream, continuously from the start, for initial runs of 30 days—and then the shutdowns were voluntary, for the purpose of inspection. There was not a single forced shutdown.

C. F. BRAUN & CO.

ENGINEERS · MANUFACTURERS · CONSTRUCTORS
ALHAMBRA, CALIFORNIA

Engineering staff working on construction plans including (seated): W. S. Gullette, development department engineer; W. Mendius, fractionation engineer; T. B. Kimball, cracking engineer; E. C. Herthel, manager of development and research department. (Standing): O. F. Campbell, combustion engineer; W. M. Flowers, cost engineer; O. G. Kaasa, instrument engineer, H. C. Kuhn, inspection engineer, and W. C. Poole, electrical engineer

avoid in so far as possible the use of welding on the alloy steel. These lines were made of very low carbon alloy steel with columbium to reduce the possibility of air-hardening defects. Vanstoned joints of the globack form were used for services requiring Series 30 or higher pressures. All other process lines were of carbon steel construction; cast iron served for low-pressure utilities.

The electrical power distribution system is carried underground, both between the several units, and within the units. Wiring for lights and instruments was run in conduit mainly overhead and supported on racks. The underground wiring is lead-covered cable, run in conduits which are encased in concrete.

The electrical installation includes some 40 miles of lead-covered cable and rubber-covered wiring, and over 16 miles of thermocouple wiring, all carried in galvanized conduit. In addition, many miles of instrument piping and conduits are routed throughout the units, in support racks. The instrument lines are located in a uniform and accessible pattern and are marked for the quick identification of any line.

The six deFlorez vertical cracking furnaces have as heat-absorbing surface a total of some 7 miles of alloy tubing. The tubes are rolled into alloy steel headers. There are 1,900 of these rolled joints.

Each of the 50 pumping units in the main plant and the 40 pumps in the auxiliary units was aligned, shimmed, and grouted, and the alignment was rechecked after the pumps were run in. A seal-oil system was interconnected to the stuffing boxes of pumps in severe services, for hot oils and for cold light-gravity products.

Plant Water System

The refinery water system, installed concurrently, circulates 24,000 g.p.m., the equivalent of the requirements for a city of some 300,000 persons. An existing cooling tower was rebuilt and a new Braun cooling tower installed. Four pumps handle the load: two pumps, each driven by a 400-hp. motor, circulate water through the refinery; and two pumps, each driven by a 250-hp. motor, lift the water from the hot well over the towers.

The water mains are 36 inches in diameter and are made of shop-fabricated, welded pipe in 60-foot sections. One unusual requirement is the spanning of a county storm channel running through the refinery. Here the two 36-inch water mains make an unsupported span of 70 feet from footing to footing; the suspended mains are reinforced to provide for the unsupported span and for loads from earthquakes.

Excellent Safety Record

An outstanding safety record was made for construction work of this magnitude. The old superstition that one life is lost for each $1,000,000 of construction work was thoroughly disproved. No lives were lost and no serious injuries occurred. Nor were there any accidents involving claims for property damage, public liability, or rigging risks.

Capacity operation was attained within one week from the start of the initial runs. Both combination units, and all the auxiliary units, remained on stream, continuously from the start, for initial runs of 30 days—and then the shutdowns were voluntary, for the purpose of inspection. There was not a single forced shutdown.

Combination Topping-Cracking Units

As stated previously, the principal distillation operations are carried on in two identical combination crude topping-cracking units having a common pump house and control room. This layout allowed for common spare pumps, cooling boxes, and other incidental items. It also centralized control of the units and simplified tie-in with the balance of the refinery.

The plant is built for running a wide variety of California crudes with sufficient flexibility to handle extraneous reduced crude, gas oil, and other stocks available from the rebuilt crude topping units. Flexibility in feed stocks is secured mainly by allotment of heat exchange and the use of a dual-fired heater, charging crude on one side and reduced crude, including extraneous feed, through the other.

Each unit is capable of charging 25,000 bbls. per day of crude and reduced crude, the variations in the charging stock ranging from as high as 20,000 bbls. crude plus 5,000 bbls. reduced crude, as one extreme, to 10,000 bbls. crude and 15,000 bbls. reduced crude, as the other.

Flow of the operation is as follows: Crude charging pumps, taking suction on a 16-inch line, discharge at 300 pounds through an automatic flow controller to exchanger, heat being furnished by circulation of upper side streams from the main fractionating column. This initial preheat is to a controlled temperature of 300° F., from whence the oil flows into a salt settler with capacity approximating one-half hour settling time. Back pressure of 250 pounds is maintained on the salt settler to suppress vaporization. Water is drawn off automatically through level controls.

Following salt settling, the crude flows to additional exchange against tar evaporator overhead vapors and circulating heat medium from the bottom of the main fractionation column, thence to one section of the feed heater. With clean exchange, firing of this side of the heater is very light, approximately 15,000,000 B.t.u.'s per hour, with a potential of 35,000,000 B.t.u.'s. Thus considerable leeway is available for dirty exchange or for handling any variation in crude quality requiring higher flash temperatures. A parallel flow is used through the crude side of the heater by means of four-way header boxes. With a pressure drop of approximately 60 pounds no difficulty is experienced with flow through the parallel paths.

Discharge from the heater is directly to the crude flash tower which fractionates the crude into 350-400° F. endpoint overhead, a kerosene distillate side stream which is steam stripped, and reduced crude bottoms testing approximately 15-18 gravity, depending upon the type of crude charged and the quality of side stream removed.

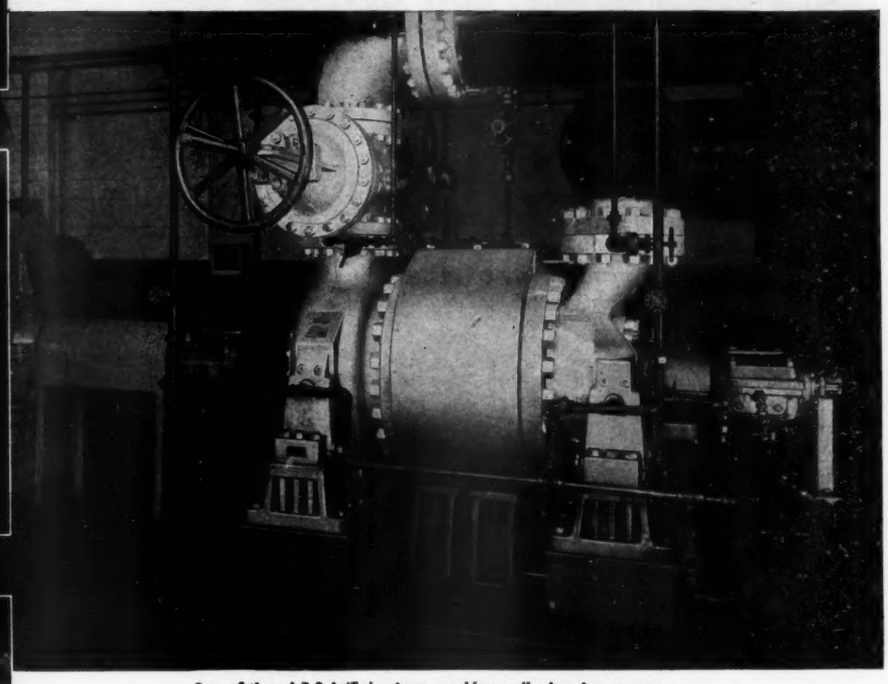
This reduced crude bottoms, together with extraneous reduced crude from tankage, serves as the main feed stock to the cracking cycle. Suction is taken on the bottom of the crude flash tower (the level of which is controlled automatically by feeding extraneous reduced crude from tankage) by centrifugal pump discharging at 300 pounds pressure through tar exchange and thence to the other half of the feed heater where the material is preheated to ±1,700° F. and discharged into the cracking cycle. The residue from the cracking cycle is flashed in the vacuum evaporator under reduced pressures. The asphalt bottoms produced from this operation are released by automatic level control on the discharge of the pump through exchangers against reduced crude. They are blended with the cracked recycle gas oil immediately after exchange, and thence flow through the tar coolers to tankage.

By control of this operation a wide range of gravity and viscosity specifications can be met.

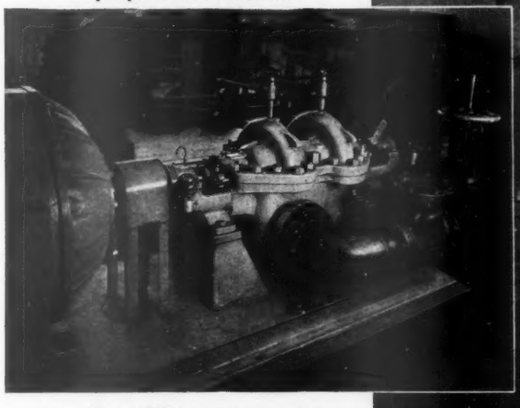
The condensed overhead from the vacuum evaporator is discharged directly to the bubble tower and furnishes the main part of the heater flow. Level in the main fractionator of the cracking cycle is maintained by extraneous gas oil feed which can be a part of the vacuum evaporator overhead previously released to tank or extraneous gas oil from lube or other refinery operations.

The heater feed is picked up with a 1,000-hp. six-stage centrifugal pump from the bottom of the fractionator and discharged through three deFlorez down-fired heaters. Here the oil is preheated to cracking temperatures and released into a common transfer line, discharging back into the cracking towers. The main fractionator removes a 400° F. endpoint cracked distillate, as an overhead product, and a stripped recycle gas oil side stream which is used in part to blend with fuel. A portion of this stripped material

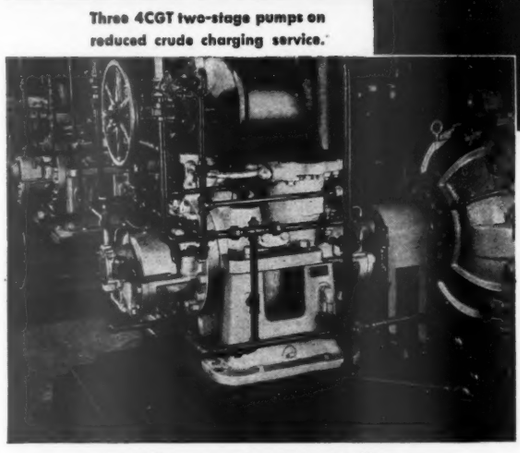
49 INGERSOLL-RAND PUMPS *in* RICHFIELD REFINERY



One of three I-R 8 AriT six-stage cracking coil charging pumps.



One of four 4GT two-stage pumps on cold crude service.



Three 4CGT two-stage pumps on reduced crude charging service.

Size 3JVL pump on hot tar service. There are 30 JVL pumps on various services in this plant.

Modern refinery production depends on the reliability of its pumps. The 49 Ingersoll-Rand pumps in the new Richfield refinery are all used for important services. Quality and dependability were the important considerations in their selection.

There are 42 Ingersoll-Rand pumps and 3 I-R compressors on the combination unit, and 7 I-R pumps on the crude unit. The 3 cracking coil charging pumps are among the largest hot oil pumps in the world.

Richfield Oil Corporation and C. F. Braun & Co., the builders, are to be congratulated for their fine work in designing and erecting this modern refinery.

Ingersoll-Rand has a complete line of pumps for all refinery services as well as compressors, ejectors, condensers and air-operated equipment.

Ingersoll-Rand
11 BROADWAY, NEW YORK, N. Y.

Atlanta, Birmingham, Boston, Buffalo, Butte, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Duluth, El Paso, Hartford, Houston, Kansas City, Knoxville, Los Angeles, Newark, New York, Philadelphia, Picher, Pittsburgh, Pottsville, Salt Lake City, San Francisco, Scranton, Seattle, St. Louis, Tulsa, Washington

734-10

Refinery supervisory personnel: H. V. Goza, foreman maintenance department; W. C. Farquhar, engineer; R. A. Panero, superintendent; C. R. McKay, manager; L. F. Strade, foreman combination units; Frank Fontana, engineer; W. R. Davis, assistant superintendent

after crude exchange, as previously described, is also cooled for circulation over the absorber. The balance is removed to tankage to augment refinery gas oil supply.

The unit is well laid out, following a natural flow which is a result of cracking still development covering a wide range of experience. For example, the overhead cracked distillate flows down through submerged condenser sections located on the roof of the control room and thence through aftercoolers into receiving drums which are located on the deck of the control room floor. Gas is released from the receiving drums into individual absorbers with the distillate flowing through overhead lines direct to the debutanizer feed drums located at ground level. Reflux pumps located immediately below the receiving drum deck take overhead suction on the receiving drums and discharge back through the control manifold located on the still side of the control deck, and thence to the top of the bubble towers. Other products, similarly, assume this natural flow.

The essential control of the units is automatic, having the latest instrumentation in level, temperature, flow, and other automatic devices. All instruments are placed in the central control room which is located to give ready access to all parts of the unit by interconnecting walks and stairways. Heater feed is controlled by electrically operated motor valves, guided by indicating flow meters. This choice of control rather than air-actuated flow controls was made since the valves will remain set in position upon power failure, which is not true of other types. All tower levels are held automatically either by control of feed to the tower or by actuation of an automatic valve on the discharge pump from the towers. Top of tower temperatures, in general, are held by temperature control. Important temperatures are on recording instruments, with intermediate temperatures available on indicating potentiometers. A Philco phone system is installed to give ready communication throughout the unit.

All of the main flows are discharged to a centralized manifold where the automatic valves are housed from weather, and which is so located in proximity to the control room that hand control can be resorted to should any instrument be out of order.

The pumps are all motor-driven Ingersoll-Rand centrifugals with centrifugal steam-driven standbys, the standby pumps being common to both stills. The exceptions to this general pump arrangement are:

1. Heater feed pumps (one per unit) which are motor driven with a steam tandem drive which automatically cuts in in case of power failure.

2. Centrifugal tar pump spares which are twin simplex. These pumps also serve for the bring-over and pumping out of the unit.

The heater feed pumps have spare barrels. The pump rooms are equipped with overhead monorails and other facilities for quick changing to the spare should the pump fail. Also the crude and reduced crude feed pumps are equipped with tandem steam-driven turbines, in addition to their common steam standby, which automatically cut in in case of power failure, thus protecting the heater flows.

The exchangers are arranged in a convenient bank and are equipped with overhead hoists for handling heads on both ends of the exchangers, as well as the tube bundle itself. The submerged condensing sections and after-coolers are also equipped with overhead trolley beams for removing this equipment to ground level for repairs.

The unit has been carefully covered with respect to safety devices which include insulated walkways at the top of the heaters leading to protected stairwells and convenient ladders spaced between stairwells for ready exit in case of fire. The heaters can be dropped through "fraid" coolers by remote control. All smothering and fire steam is also grouped at points remote from the equipment. Complete foamite protection is available through foamite headers in the trenches and stations located conveniently throughout the unit. Proper ventilation is secured by means of large suction fans located on the second deck and taking suction from the ceiling of the hot pump rooms. Suction to these fans is automatically closed in case of fire.

To meet corrosion, all heater piping, tubes, and fittings are of chrome-moly alloy. All process piping of 600° F. or above is also of chrome alloy. Sections of the cracking towers operating above 600° F. are lined with chrome alloy strips welded on, and are equipped with alloy bubble caps and trays. High-temperature exchangers are similarly protected and in addition are equipped with alloy tube bundles. All piping subject to corrosion is protected with weep holes, consisting of a one-eighth inch hole drilled to a depth equivalent to the allowable pipe thickness. A half-inch pipe is welded over the hole and projects through the insulation, thus offering an immediate telltale in case of severe wear or corrosion. This is known as the deFlorez "Safety Drilling Method."

The tubes in all heaters are equipped with metal temperature couples for guidance in firing and heat distribution. Careful inspections are made at the end of each run. Tubes are calibrated by means of an electrically indicating tube caliper dropped through the tube. Fabricated piping is so constructed that inspection can be readily made of any section or fitting for corrosion or cleanliness. All bubble trays and baffles are furnished with individual manholes for inspection and cleaning. The vapor lines are continuously fed with aqueous ammonia, piped from common centralized refinery supply, in sufficient quantity to maintain 7-8 pH value on the overhead streams.

Heat exchange utilized on the unit is in keeping with good engineering practice. Approximately 33 per cent of the total heat required is supplied by exchange. Efficiency of the deFlorez heaters, approaching 80 per cent, in addition to the waste heat exchange, gives extremely low overall fuel figures. Recent tests show as low as 200,000 B.t.u.'s per barrel of feed. In addition, each unit furnishes heat for casinghead recovery from gas and stabilization of its own distillate.

The yield of 400° F. endpoint distillate ranges from 32 to 40 per cent depending upon the gravity of the reduced crude charged to the cracking cycle and to the viscosity of the fuel produced. Fuel viscosities range from 90 to 150 SF maximum at 122° F. Conversion rates on the deFlorez heaters, approaching 20 per cent conversion per pass, have been realized with no coking of the heaters. Initial runs were of 30 days' duration on each unit, shutdowns being on schedule as dictated by inspection routine.

Typical yields on type reduced crudes available to date are as follows:

TYPICAL YIELD DATA

Type of reduced crude—	Ventura	Wilmington
400 endpoint cracked distillate ..	38.5	35.1
Dry gas, fuel equiv. at 1,300 B.t.u.	4.5	4.2
Cracked tar	61.5	65.7
Viscosity at 122 S.F.	135	100

The planning and engineering of a unit of this size required considerable effort on the part of a specialized staff. The effort and time spent were justified by length of initial runs and capacities reached both units giving substantial overloads on design ratings within a few days after initial bring-over. Runs to date have been shut down on 30-day cycles for inspection. As soon as corrosion rates have been established, longer runs will be in order—90-day runs being entirely feasible. Although the units are essentially designed for heavy oils, flexibility in equipment can quite readily accommodate cracking of light distillates or reforming of naphthas.

Fuel and Heat Economy

Since fuel is a major item of operating cost in any refinery, the conservation of fuel and heat was of primary importance.

Down-fired deFlorez heaters were selected for cracking service. These heaters have proved themselves over a period of many years of operation and their maintenance cost is extremely low. Distribution of heat to various points of the deFlorez heater can be readily controlled within desired limits. At the present time they are operating at efficiencies approaching 80 per cent. The six deFlorez heaters on the two combination units

have a potential fuel capacity of 480,000,000 B.t.u.'s per hour.

The size of the two deFlorez heaters can readily be vizualized, as over 41,000 linear feet of 4.6 per cent chrome alloy tubing, 800,000 fire brick and 1,200 tons of structural steel were required to build them.

Heat requirements for crude distillation are substantially met, when exchangers are clean, by heat exchanging with the various streams from the cracking cycle. Additional heat, if necessary, is supplied by double fired heaters with two radiant sections and a single convection section in a common setting. The heat input duty of these heaters increases as the exchangers become dirty during long runs. Crude is first exchanged against circulating upper side streams from the main bubble column. This serves three purposes: First, it removes the potential heat at the optimum temperature gradient; second, it reduces corrosion in the top of the column by reducing wet trim reflux with its resultant shock chilling, and third, it reduces the combined overhead and exchanger surface since the majority of the reflux load is taken out of the overhead condenser where overall transfer rates are poor.

The effluent temperature of the crude from these exchangers is maintained at about 300° F. by control of the quantity of side stream circulated. The crude then flows to salt settlers. After salt settling, the crude flows to exchange against additional side streams, followed by vacuum evaporator overhead vapors.

Following the vacuum evaporator overhead exchangers, crude is exchanged against heat medium circulated from the bottom of the main bubble column. The heat to the crude from this stream is controlled to balance out the heat load on the cracking cycle. A portion of the heat medium stream is also used to supply heat for debutanization and stabilization of the cracked distillate. Finally, the crude is exchanged against cracked residuum.

In arranging the heat exchange in the above order, consideration was given to the volume of heat available at various points. Normally, it would appear that the vacuum evaporator overhead exchange should follow the main column bottoms circulation since the temperature of the heat medium stream is lower. If so arranged, less heat could be recovered from the vacuum overhead, and the balance of this heat would have to be removed with water. The net result would have been more fuel on the crude heater and more water circulation for cooling with only a slight change in exchanger surface requirements. After removing all the heat economically advisable from the vacuum overhead, it was still possible to remove the desired heat from the cracking system by main column bottoms circulation and maintain very satisfactory terminal temperature differences between crude and circulated stream without excessive circulation.

This exchange arrangement has resulted in low fuel requirements. Recent operations show fuel figures as low as 200,000 B.t.u.'s per barrel of feed to the unit. Pick-up of waste heat by exchange totals approximately 100,000 B.t.u.'s per barrel of feed, thus indicating a 33 per cent savings in overall fuel requirements.

Instrumentation

The importance of modern and dependable control instruments in present-day refinery equipment can be readily appreciated by a visit to the new Richfield refinery. Without the aid of proper control equipment the combination crude topping and cracking units now in service at Watson could not operate efficiently. It is doubtful if the individual efforts of a number of operators could ever be coordinated to give the exacting control now obtained.

The control room is located on the floor above the combined pump house for the two units. The oil piping is so laid out that the more important of the motor operated valves are located just outside of the control room so that they are reasonably accessible to the operators in case of instrument failures. By-passes around motor operated valves are fitted with globe valves which are not over one normal line size larger than the motor valve, thus assuring accurate hand control whenever necessary. To facilitate changing from hand to automatic control, each motor operated valve is equipped with a small pressure gauge to show diaphragm air pressure.

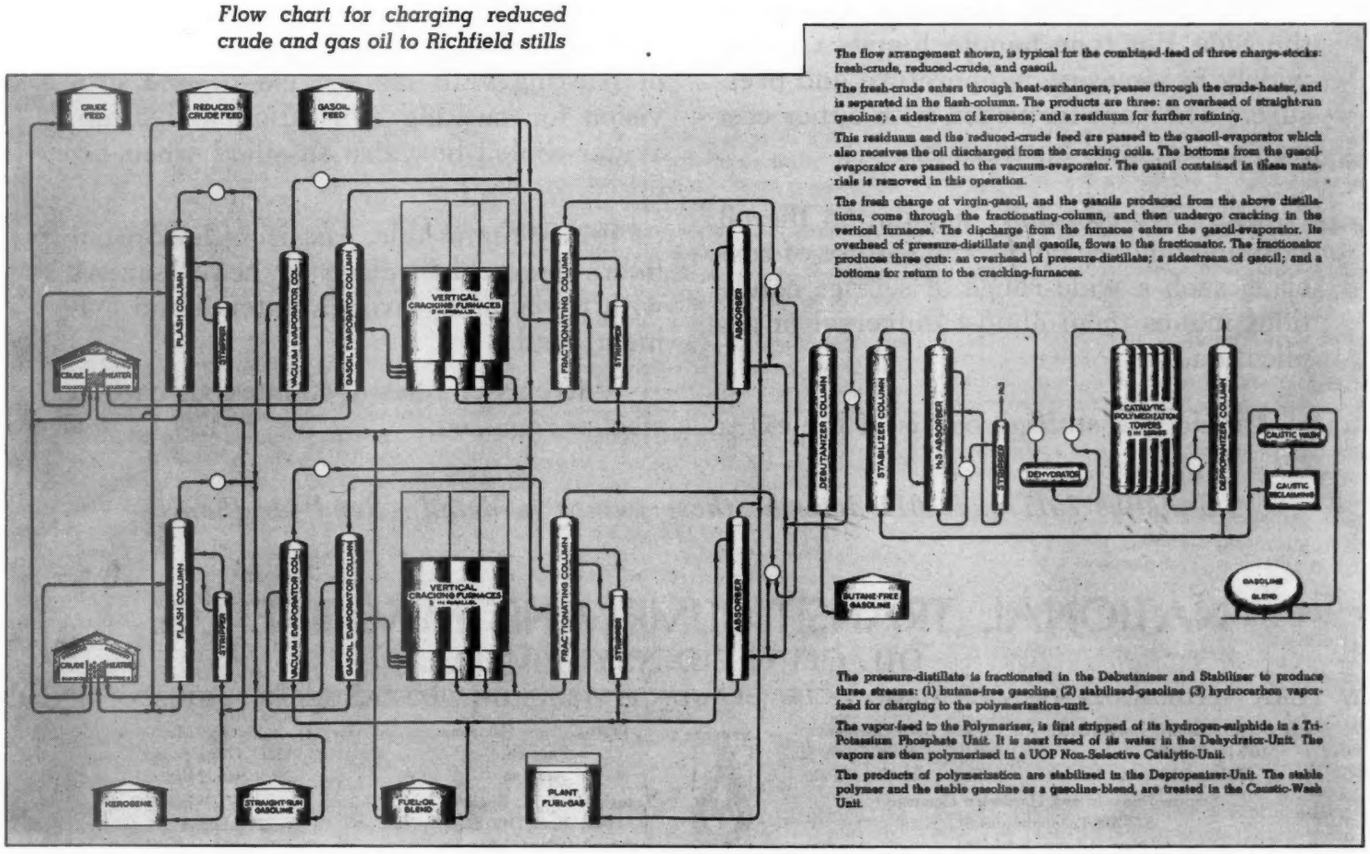
The units are equipped with more than 100 diaphragm motor valves ranging in size from one-half inch to 10 inches. In addition to the above conventional air actuated type of valves, there are 14 which are operated by explosion-proof reversible motors through gear trains and two which are operated by Selsyn motors through gear trains.

This type of control was chosen for the large heater release valves because it allows the operator to "feel" small changes in the valve setting.

Most of the air actuated valves are operated by recording flow controllers; however, there are some which are operated by level recording pressure and potentiometer or bulb type recording temperature controllers.

Much space was required for the mounting of the control instruments and pressure gauges in the control room. The combination units' instrument board is approximately 8 feet high and 83 feet long. The major instruments are mounted in two rows throughout the length of the board, with a third row (above the other two) being used for pressure gauges and other instruments not requiring frequent adjustment. There are 137 instruments on the board. These include 43 flow

Flow chart for charging reduced crude and gas oil to Richfield stills



The flow arrangement shown, is typical for the combined-feed of three charge-stocks: fresh-crude, reduced-crude, and gasoil.

The fresh-crude enters through heat-exchangers, passes through the crude-heater, and is separated in the flash-column. The products are three: an overhead of straight-run gasoline; a sidestream of kerosene; and a residuum for further refining.

This residuum and the reduced-crude feed are passed to the gasoil-evaporator which also receives the oil discharged from the cracking coils. The bottoms from the gasoil-evaporator are passed to the vacuum-evaporator. The gasoil contained in these materials is removed in this operation.

The fresh charge of virgin-gasoil, and the gasoils produced from the above distillations, come through the fractionating-column, and then undergo cracking in the vertical furnaces. The discharge from the furnaces enters the gasoil-evaporator. Its overhead of pressure-distillate and gasoils, flows to the fractionator. The fractionator produces three cuts: an overhead of pressure-distillate; a sidestream of gasoil; and a bottoms for return to the cracking-furnaces.

The pressure-distillate is fractionated in the Debutanizer and Stabilizer to produce three streams: (1) butane-free gasoline (2) stabilized-gasoline (3) hydrocarbon vapor-feed for charging to the polymerization-unit.

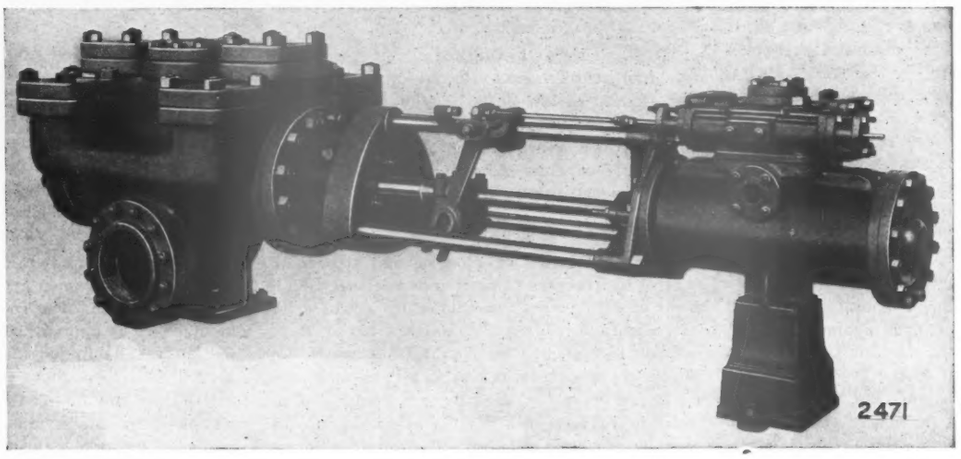
The vapor-feed to the Polymeriser, is first stripped of its hydrogen-sulphide in a Tri-Potassium Phosphate Unit. It is next freed of its water in the Dehydrator-Unit. The vapors are then polymerized in a UOP Non-Selective Catalytic-Unit.

The products of polymerization are stabilized in the Depropanizer-Unit. The stable polymer and the stable gasoline as a gasoline-blend, are treated in the Caustic-Wash Unit.

an almost universal refinery pump

TRANSIT SIDE POT TYPE

Cast Iron Liquid End—Pressures up to 500 lb. per square inch.
Cast Steel Liquid End—Pressures up to 600 lb. per square inch.
Liquid Temperature—Up to 800° Fahr.



TRANSIT close clearance pumps of the Side Pot type handle liquids varying widely in viscosity, temperature and pressure. They are furnished with either cast iron or cast steel liquid ends.

They are especially popular in the oil refining industry where the feature of covering such a wide range of service conditions makes them almost universal in application.

Liquid end stuffing box is of the extra deep type with space for 14 rings of packing without lantern gland; or space for 10 rings of packing with lantern gland, and provision for packing lubrication and drain. Water-cooled box also supplied when ordered.

Easily removable, cast iron, leak-proof liners are held in place by heavy screws with cover nuts, through outer liquid cylinder head.

Valve assemblies of stainless or carbon steel as required.

Bulletins 2011 and 2012 describe these pumps in detail. Send for them.

NATIONAL TRANSIT PUMP AND MACHINE CO.

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Transit Pump & Engine Co.,
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Reeves & Skinner Machinery Co.,
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Eugene V. Winter Co.,
320 Market St.,
San Francisco, California

meters, 28 flow controllers, 26 pressure gauges, 22 recording potentiometers, 8 recording potentiometer controllers, 4 recording pressure controllers, 4 recording pressure gauges, and 2 indicating potentiometers. Each of the indicating potentiometers is coupled with a switch panel having 96 points. The number of the recording instruments required was materially reduced by adding 75 extra pens to the instruments for recording related pressures or levels.

Levels in 14 towers and six receivers are indicated on the board by the simple expedient of recording the air pressure which the level control pilots exert on the diaphragms of the liquid level controlled motor operated valves. This pressure is readily translated into feet of liquid by the operators.

Communication between strategic points about the unit and the control room is facilitated by the use of a Philco phone. A total of 15 outside stations have been provided. This instrument is practically indispensable during bring-overs, shutdowns, and emergency periods.

Ordinarily in bringing up a new unit there is a certain amount of confusion about the location of any one of the numerous control valves. In order to eliminate this condition, a system was devised wherein each valve was assigned a number with respect to its location. These numbers appear adjacent to the instrument controlling the valve, as well as on directories located about the units. For example, on each walkway level, around the bubble columns, there is a directory listing the numbers of the motor operated valves at that elevation. These directories are located near the stair landings on each walkway.

Considerable precautions were taken to insure uninterrupted air supply to the control mechanism of the instrument. A 120 c.f.m. electrically driven compressor was installed solely to supply this air. Should this compressor fail for any reason regular plant air from either a 3,000 c.f.m. electrically driven compressor or from a steam-driven machine will cut in automatically. This instrument air must be dry; therefore, it is passed through large receivers where any moisture is settled out before a final reduction to 20-pound pressure is made.

It is believed that the instrumentation of these units represents the ultimate in present-day refinery installations of automatic controls.

The cost of such an elaborate instrumentation was justified by the ease with which these large units were first brought on stream and maintained on stream for the extended period of the initial runs.

Utilities

The water supply for the plant is secured from five wells varying in depth from 650 feet to 800 feet. These wells have ample capacity for make-up requirements under the new operation conditions. There are four cooling towers scattered throughout the refinery; two of these were relatively small and were not considered in the expansion program.

All new water pumps are driven by 80 per cent power factor synchronous motors. These help to maintain the plant power factor at substantially unity. Since the pumps on No. 2 tower are located quite a distance from the new units, tell-tale lights were installed on the instrument board of the new combination units to indicate that the pumps are in operation.

There were two boiler houses in the refinery. The new units, being primarily electrically powered, brought the steam demand within the limits of the larger of these boiler houses which was also the one nearest the new combination units. The emergency steam turbine driven pumps in the new combination units were arranged to cut in automatically when a power failure caused a decrease of the normal speed. This called for an almost instantaneous increase in steam load of 60,000 pounds per hour. An additional 25,000 pounds per hour might be cut in within a few minutes' time due to starting up other spare pumps. This meant an increase of almost 50 per cent on the normal steam load.

Synchronous motor-driven air compressors

With the revamped boiler house enough boilers are kept on the line continuously and at a relatively low rating to carry maximum demand in an emergency. The plant electrical installation was entirely inadequate for the new power requirements. The main substation was rebuilt and nine 1,000-kw. transformers were installed by the California Edison Co. Six of these will carry the plant load for a short period of time. Manually operated switches were provided to cut out individual banks of transformers. The old substation was connected to two feeders from independent sources of power through manually operated switch gear. To secure maximum protection for the new equipment, the new substation was equipped with the same two-way feeders, with the added feature of reverse power relays so arranged that both feeders were normally in service, and either feeder would be automatically cut out in case of a fault, leaving uninterrupted service from one source. The advantage of this hook-up was demonstrated recently when several brief power failures occurred in the Los Angeles area with no interruption at the Watson refinery.

With the increased transformer capacity it became necessary to either change all old switch gear in the plant or provide some means of reducing the fault current. Reactors were installed to bring the entire plant fault current below 50,000 kva. In addition, reactors were installed ahead of the original bus structure to keep the fault current on old switch gear below 15,000 kva. This materially reduced the investment in new starting equipment and saved replacement of all old switch gear. It is believed that this is the first time an installation of this type has been made in an industrial plant on the Pacific Coast.

In order to further protect the new units from power failure, four parallel feeders with reverse power relays on each were installed between the substation and the new units.

An automatic steam-turbine-driven generator was installed with sufficient capacity to handle all instruments, motor-operated valves, emergency lights scattered throughout the unit, and the independently driven lubricating oil pumps for the 1,000-hp. motors. The generator was hooked up to cut in automatically on power failure.

The old compressors for plant air supply did not have enough air capacity to operate still cleaning equipment on the new units. For this duty a 3,000-c.f.m. 125-pound discharge pressure air compressor, direct driven by a unity power factor synchronous motor, was installed.

All other utilities, including fire protection equipment, were adequate for the new service. These were extended to the new area where required, but no additions to the main systems were necessary.

Expansion of Electrical Equipment

The power rates existing in the Los Angeles area were sufficiently low to make the use of electric power more desirable than the use of steam, since the use of steam for full load would require extensive additions to the existing boiler house.

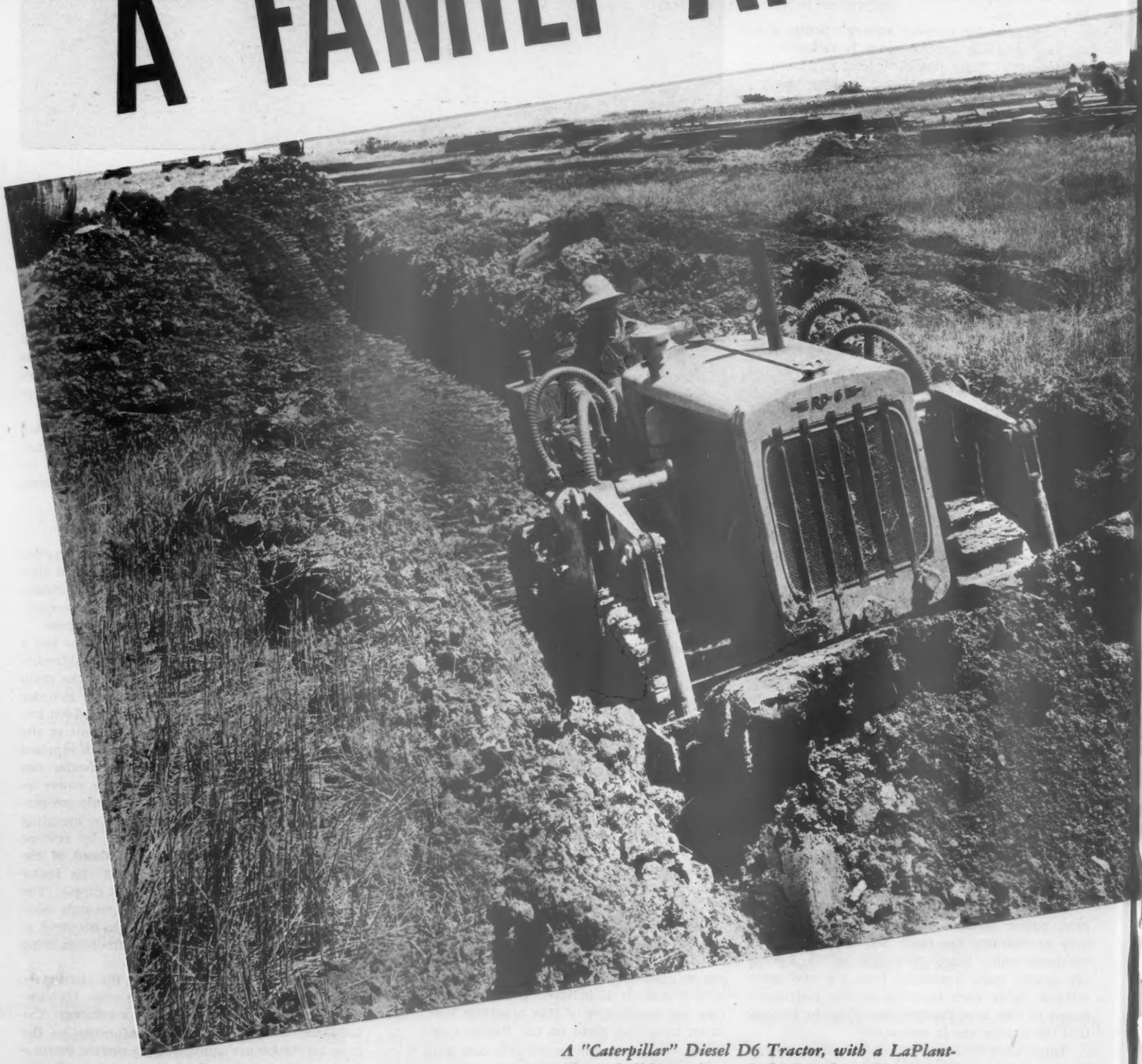
The old transformers and switching gear had a capacity of only 3,000 kw.; therefore, considerable rehabilitation and expansion in size of the main Watson refinery substation was necessary in order to handle potential new requirements of 9,000 kw.

The utility company furnishes current to the new substation through two feeders, each supplied from an independent source. Either feeder can supply the whole plant load in case of a power interruption in the other. To secure maximum protection in case of a power failure in the incoming feeders, automatic switches actuated by reverse power relays have been installed, ahead of the transformer bank, which disconnect the faulty feeder without interrupting the plant supply. The usefulness of this arrangement was recently demonstrated when several power failures occurred in the Los Angeles district with no interruption being experienced by the refinery.

The 11,000-volt current entering the plant is reduced to 2,300 volts through the nine 1,000-kw. transformers in the main refinery substation. The 2,300-volt feeders from the transformers to the main substation are equipped with current limiting reactors. These reduce the fault current on all new switch gear in the main substation to approximately 50,000 kva. This fault current is considerably lower than that resulting from the transformer

(Continued on Page 57)

"LET'S MAKE IT A FAMILY AFFAIR!"



A "Caterpillar" Diesel D6 Tractor, with a LaPlant-Choate bulldozer, digs a slush-pit and auxiliary pit in gumbo soil in approximately 7 hours—on a few gallons of low-cost fuel! Working for the Magnolia Oil Co. Owned by Howard Johnson, Ellinwood, Kansas.

Bemis Potential Obtained By Productivity Index

By HARRY F. SIMONS

Open-flow physical potentials may be abandoned in the State of Kansas if a new method employing liquid level-finding devices for obtaining a productivity index of the individual wells proves successful. Work of taking potentials in the Bemis pool in Ellis County, the first pumping field to be tested in this manner, was completed February 14 and as soon as the records are completed the proration crews will move to the South Trapp pool in Russell and Barton counties. The net February allowable for the Bemis field was 129,097 bbls., 1 per cent of its potential.

The potential for the 187 flush wells was 498,801 bbls., as obtained by the old open-flow

Wave-recording instrument that uses a hot-wire microphone to pick up reflections. Operator is H. S. Lindley

method based on either two four-hour test periods, with the lesser production period being multiplied by six to obtain daily production, or an eight-hour test using three as a multiple to obtain 24-hour production of the well. The same wells were given a total potential of 588,966 bbls. daily under the new system which used one of three approved types of liquid level finders for obtaining the draw-down of each well at three rates of production and then extrapolating a curve to determine the well's capacity to produce. Individual well allowables will be changed within the field but the pool as a whole will not have its allowable increased.

The productivity index method was proved satisfactory for flowing wells by work recently completed in the Zenith field in Stafford County (The Oil and Gas Journal, February 9, 1939, Page 44); the method was applied there at the request of operators in the pool who wished to conserve the energy and eliminate waste incidental to open-flow potentials.

Under the old rules for taking potentials operators were only partially restricted and, in their efforts to obtain maximum allowables, wells were overequipped 75 per cent in many cases. Three-inch tubing with a 2¾-inch plunger was run with perforations well into the pay formation; pumping units powered by as high as 75-hp. engines, capable of a 54-inch stroke at a rate of 50 s.p.m. were placed over the wells. Length of working barrels in some cases reached 15 feet. While tubing size, and length of the stroke were regulated, there was no limitation put on the number of strokes per minute.

Potentials under this arrangement were more a test of the ingenuity of the operators and of the equipment installed than they were of the well's ability to produce. Many wells were worked over prior to taking a potential at considerable cost to the operator; surface equipment, already oversize, was increased further. By the use of a combination string of rods to provide the maximum elasticity and by speeding up of the pumping motion, the plunger would overreach, in some cases 200 per cent volumetric displacement being obtained.

Production in the Bemis field is from the Arbuckle lime, the pool being opened by the Roark and others No. 1 Bemis, SE SE SE Section 16-11s-17w, in October, 1935. The well was originally completed from 2,830 to 3,040 feet for 514 bbls. but was deepened and recompleted as an Arbuckle producer with an initial production of 540 bbls. in 23 hours. Margay Oil Co. purchased the Roark interests and drilled the second well in the field, a west offset to the discovery well, to 3,382 feet where a production of 1,353 bbls. of 35-gravity oil was obtained.

The field now occupies parts of Sections 14, 15, 16, 21, all of Section 22, parts of Sections 23, 26, 27, 28, 29-11s-17w. The terrain is very rugged, but the Arbuckle is generally found from 1,450 to 1,500 feet subsea level. The structure is anticlinal with the closure being evident to some extent in the upper formations. Many of the wells only penetrated the pay section, while others drilled into it as much as 28 feet; the pay section varies from 2 to 40 feet.

There is little gas associated with the Arbuckle, a pumping unit being set on most wells before a potential test can be taken; the water drive is good and if wells are not treated properly coning may develop. Control of the water drive will lead to a natural water-flood with a higher recovery of oil, according to many of the engineers working in the field. Shut-in wells show a fluid level of 2,500 to 2,800 feet above the top of the producing formation.

Operators realized that the potential race was costing them money which they could ill afford in view of the curtailment requiring long-term investment. With an anticipated recovery of from 5,000 to 8,000 bbls. per acre, lifting cost of 25 cents per barrel and a $40,000 investment for drilling and equipping a well, it was evident that a reduction in expenses was necessary if the operations were to show a profit. Reduction in the size and length of the tubing and rods and smaller pumping units would be adequate if the necessity of obtaining a large potential was eliminated.

There was also the feeling that many wells were damaged in completion in an effort to get a large potential. Wells were often drilled into water, or drilled to within a few feet of water and after acidization soon began making water. Control of the water in the early stages of a pool would result in a greater recovery for all interested.

After hearing the application of the Bemis pool operators and tentatively approving of the project, a meeting of the operators was held at Wichita, Kans., on December 29 to select an executive committee. Floyd Lockhart, Pryor & Lockhart, was elected chairman; E. G. Dahlgren, conservation division director, secretary; other members selected were: E. L. Birmingham, Margay Oil Co.; C. O. Moss, Deep Rock Oil Co.; Max Mahaffey, Cities Service Oil Co.; H. E. Zoller, Shell Petroleum Corp.; Fred Mallonee, Magnolia Petroleum Co., and M. Harrell, Texas Co.

The committee approved the use of three instruments, the Depthograph, Echometer and recording bottom-hole pressure gauge. The first two are methods of determining fluid levels in wells

While taking potential on the York State Oil Co. No. 2 Bemis: E. W. Schumaker; J. A. Tuten, state conservation staff; E. S. Henderson, pumper for York State Oil Co; J. F. Haely, petroleum engineer for the Corporation Commission; Herman Fisher, superintendent, York State; G. A. Vaughan; Red Pendergrass, conservation staff; A. J. Gilham, York State; Gilbert N. Wilson

by the reflection of sound waves and the third indirectly determines the fluid level. To obtain bottom-hole pressure by the first method it is only necessary to multiply by the fluid density; fluid level by the use of a bottom-hole pressure gauge is obtained by dividing by the fluid density. Tubing perforations in wells to be tested were to be located in the top of the Arbuckle lime. Work of taking the potentials was scheduled to start on January 3.

Tests on wells were started on January 4 under the direction of Joseph L. Haely, engineer for the Corporation Commission, assisted by H. C. Smith, field supervisor, and A. H. Pendergrass, Al Tuten, Robert Robson and L. B. Taylor of the conservation staff. Operators of the wave reflection devices were George Vaughan, Gilbert Wilson, Frank Liscum and William Lindley. At the time the work was started it was estimated that it would take until March 1 to complete the taking of the potentials for the field, but the work was completed ahead of schedule.

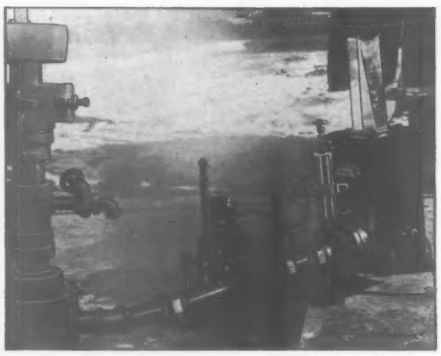
Three wells were tested daily by each of the wave reflection machines which were checked frequently by running duplicate tests on the same well by both machines and a recording bottom-hole pressure gauge. Operators were allowed to decide which instrument they wanted to use.

First wells tested were the Shell Petroleum Corp. No. 1 Rumsey, NW NW NW Section 23-11s-17w; No. 16 Rumsey, SE SE NW of the same section and the Ryan Consolidated No. A-1 Bemis, NW NW NW Section 22-11s-17w, and the No. C-3 Bemis, NE SE SW Section 21-11s-17w. The No. 16 Rumsey was one of the few wells in the field to have its potential reduced as it had a potential obtained on December 2, 1938, of 3,746 bbls., the largest pumping potential ever obtained in the state, and while the potential as indicated by productivity index was much over this amount, potential allowed any well was limited by the Conservation Commission order to 3,500 bbls.

The productivity index is defined as the production rate in barrels per day per pound of draw-down in bottom-hole pressure. By obtaining the bottom-hole pressures for different rates of production the maximum well potential can be determined. In the Bemis pool three liquid levels were established after the well reached equilibrium at different rates of production. Pumping speeds to establish definite points for establishing the draw-down curve were at rates of 5, 10, and 15 per cent of the probable well potential or the maximum allowed potential, whichever was smaller. Production gauges were taken for a three-hour period after the well reached its lowest stabilization point, two hours after reaching the middle stabilization point, and one hour after reaching its maximum stabilization point. Stabilization at the different rates of production was reached more readily on the larger wells than on the smaller wells.

The curve for the draw-down is a straight line plotted through the lowest production rate and an average of the two higher rates; the curve is extended to include the production rate as if the well were tubed to the bottom and the fluid exhausted. On wells producing salt water, the percentage of water produced is deducted from the potential; if the potential exceeds the maximum allowed the well is given a rating of 3,500 bbls., less the per cent of salt water.

Operators in the Bemis pool had their choice of instruments to be used on their wells. Several



Wave-recording instrument that uses a sensitive diaphragm. Note that the instrument is connected directly into the casing

used recording bottom-hole pressure gauges but this method requires a rod job before and after making the test; this instrument is widely used for testing flowing wells and its operation is familiar to petroleum engineers. The wave reflection method needs only a separate connection on the casing as disturbing echoes are set up if it is connected into lines leading from or to the well.

Both instruments operate on the same principle, a wave being started down the annular space which will be reflected by any obstruction or change in the cross-sectional area; a heavy reflection is given by the fluid level. The reflections are recorded on a constant speed chart that is graduated in 0.1 and 0.02 second. Each tubing collar gives a reflection that is recorded on the chart. By counting the number of collars to the fluid level and multiplying by the average length of the tubing joints, the height of the fluid in the hole is obtained. Changes in the wave velocity are evident from a study of the charts obtained.

The instruments differ in regard to the waves used, one employing an inaudible wave made by releasing a small charge of compressed gas into the casing and the other using a blank service rifle cartridge in a yacht cannon. The recording instruments are also different since one employs a highly sensitive diaphragm to actuate a curved mirror which reflects a constant light stream on sensitized paper; movement of the mirror causes the reflected light beam to move. The other instrument employs a hot-wire microphone, the changes in density of the gas due to the reflected waves causing a variation in potential of the current carried to the recording instrument.

The procedure as followed at Bemis is to put the wells on the slow rate of production (5 per cent) at midnight with the direct and diagonal offsets closed. At 8 a.m. the wave reflection truck and state gaugers arrive and test the well for the fluid level; from 10 to 20 minutes is required to make the test and get to the next well as only one 2-inch union is required to connect the wave recording machines. The procedure is repeated on the other wells to be tested and the truck returns to the first well at least one hour later. If the fluid level is found to be within 5 feet of its previous level, the well is considered to be stabilized at that rate and the three-hour production test is made, after which the rate is increased, fluid level at the next highest speed is established, and the production test is made. The procedure is repeated for the third rate of production.

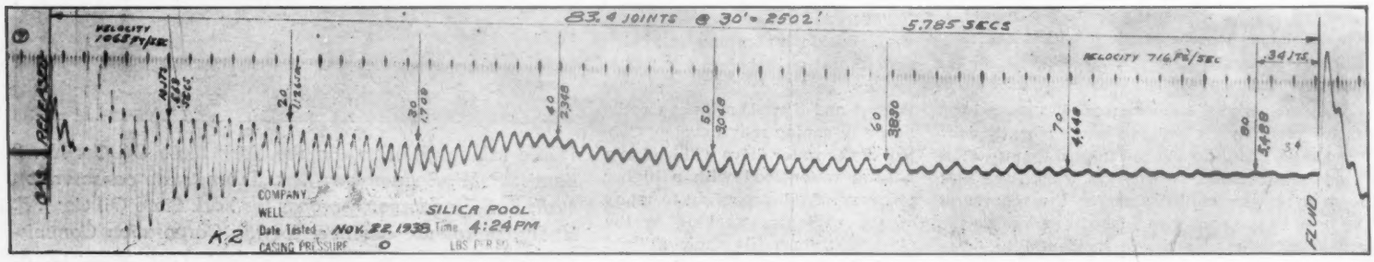
Three tests can be run simultaneously as only a few minutes are required to hook up the truck for obtaining the fluid level. Some operators prefer to shut the wells in after establishing the potential and test periodically to determine the time necessary for the well to develop its static fluid level. Production during the pre-test and test period averaged less than 500 bbls. per well; such a potential formerly would have required the production of at least 1,166 bbls. per well. While the operator must furnish the means of obtaining the fluid level, all of the original charts on the potentials become the property of the state and are filed by the Corporation Commission as part of its permanent record.

Potential for each well is obtained by multiplying the fluid head in feet by the average productivity index plus the daily rate of production at the minimum testing rate. The average index in barrels per day per foot draw-down is equal to one-half of the following:

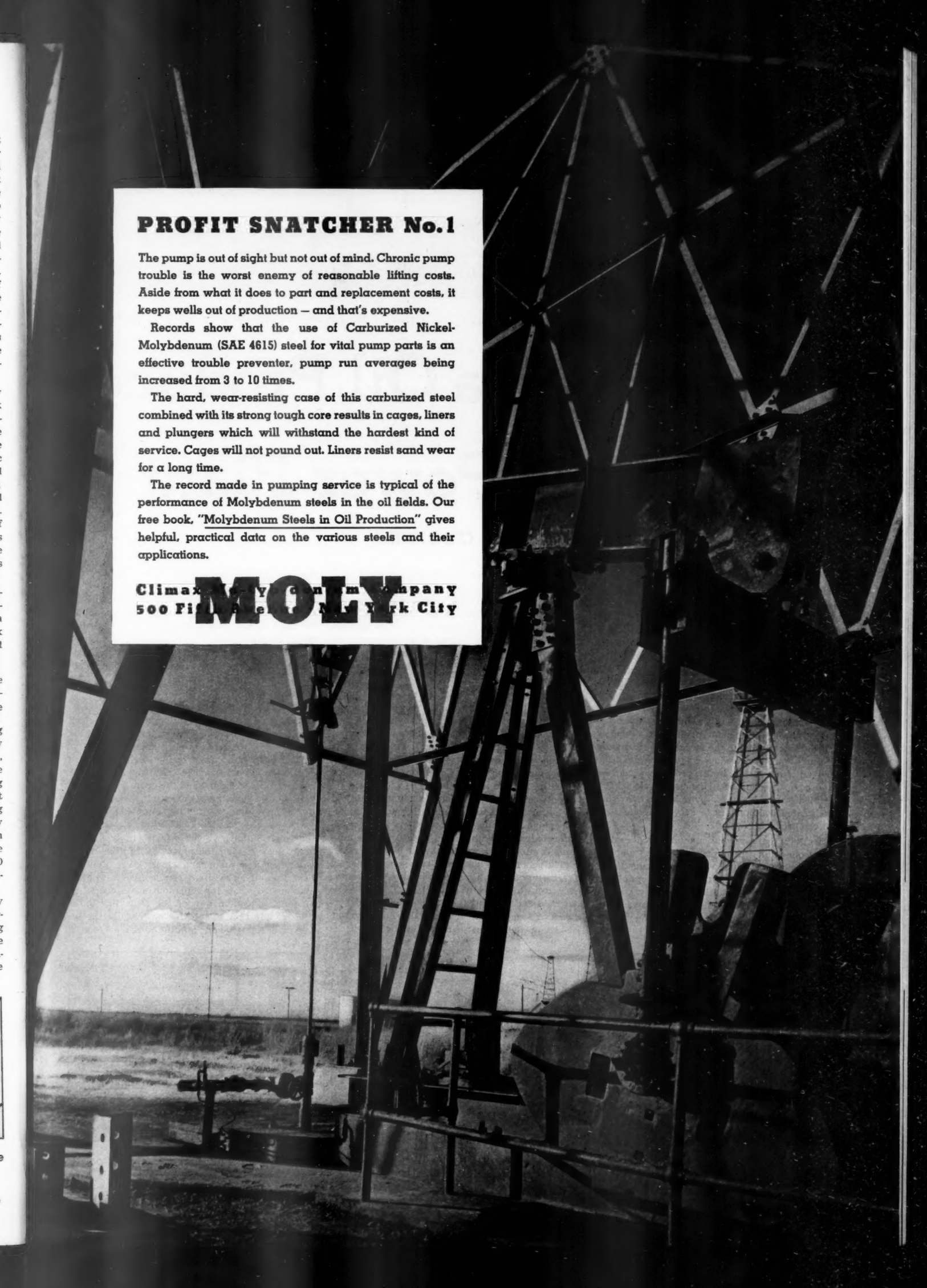
$$\frac{\text{Daily prod. 2 rate-1 rate}}{\text{fluid head 1 rate-2 rate}} + \frac{\text{daily prod. 3 rate-1 rate}}{\text{fluid head 1 rate-3 rate}}$$

Order for the change in the manner of taking potentials in the South Trapp pool was issued by the Corporation Commission on December 22, 1938. Operators in other pools are watching the method with interest and are planning on seeking its adoption if it continues to be successful as it represents a saving reflected by reduced lifting cost through the elimination of heavy machinery that is used for taking potential tests and then stands idle through most of the month because of the low allowables. Pumping units, using 10 to 15 hp. may thus replace units of 50-hp. capacity.

Wells drilled in fields using the productivity index method will be equipped with lighter surface machinery and shorter and lighter tubing strings and if the method is adopted for the entire state a change in the size of new well installations will probably be apparent throughout the Kansas oil fields.



Wave-reflection chart from one of the tests run preparatory to taking potentials in the Bemis pool. Note the difference in velocity of wave at top of the hole and just above the fluid level



PROFIT SNATCHER No. 1

The pump is out of sight but not out of mind. Chronic pump trouble is the worst enemy of reasonable lifting costs. Aside from what it does to part and replacement costs, it keeps wells out of production — and that's expensive.

Records show that the use of Carburized Nickel-Molybdenum (SAE 4615) steel for vital pump parts is an effective trouble preventer, pump run averages being increased from 3 to 10 times.

The hard, wear-resisting case of this carburized steel combined with its strong tough core results in cages, liners and plungers which will withstand the hardest kind of service. Cages will not pound out. Liners resist sand wear for a long time.

The record made in pumping service is typical of the performance of Molybdenum steels in the oil fields. Our free book, "Molybdenum Steels in Oil Production" gives helpful, practical data on the various steels and their applications.

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General view of the central plant of the National Petroleum Co. located on the Hunter-Campbell-Stanton group properties

Pennsylvania Oil Producer Operates Power Plant

By J. P. O'DONNELL

The most thoroughly developed property from an electrical standpoint in the Middle district, Pennsylvania, fields is in Southwest Township, Warren County, where the National Petroleum Co., of Titusville, Pa., has eight leases which are being operated as a unit. They are the Hunter, Zane, Reeves, Campbell, Huidekoper, Stanton, Wakeman and Van Wyck farms, adjacent leases, containing about 600 acres. Cost figures show this to be one of the most economically operated properties in this area. While part of this lower cost is attributed to the fact that the property lends itself well to modern, efficient secondary methods, much is due to the fact that the company continually pushes a "reduce costs" program. One of the important factors in this program, according to the company, has been the use of electricity, generated on the lease, for pumping and for running isolated compressors to recycle aerated gas from the producing wells.

Formerly the company manufactured casinghead gasoline at a central plant on the J. Campbell farm, using high vacuum. With the introduction of the repressuring program, the compressors of this plant were used and additional capacity was installed so that now there is a daily capacity of about 2½ million cubic feet of free air or gas per day at the plant and approximately 500,000 cu. ft. per day handled by the outlying motor-driven compressors.

An Ingersoll-Rand XVG three-stage compressor is used for the injection of air. Three stages are used because such an arrangement is more suitable for furnishing the required air at various pressures. All of the other compressors are recycling return gas from the wells, which has an air content of approximately 70 per cent.

Power for pumping and for the isolated compressors above mentioned is furnished by the generator direct-connected to an eight-cylinder, 6 by 9 vertical four-cycle National Transit engine with a rating of 108 hp. at 600 r.p.m. This engine is equipped with two patented air- and gas-regulating valves, which enable it to operate on the aerated gas with complete satisfaction. The valves provide not only correctly proportioned amounts of air and gas but also effect the essential thorough mixture. The engine is equipped with oil filters and thermostatic controls on both oil and water so that a minimum of attention is required by the plant operator.

The generator is a 60-cycle, three-phase, 440-volt, alternating-current type with a direct-connected exciter or direct-current generator which energizes the field and controls the amount of current produced. The governors of the engine are very sensitive, and the voltage is controlled by one of the newest type Westinghouse automatic voltage regulators.

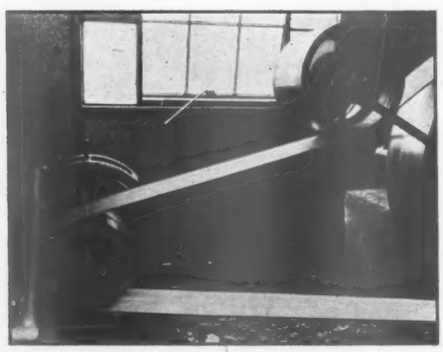
The control board is nearly fool-proof with the automatic voltage regulator being in the upper left-hand corner. The panel is known as a "dead front" because there is no possibility of electrical contact, by the operator, from the front of the board. Even the fuse boxes are automatically locked and cannot be opened unless the switches are thrown to the "off" position. The walkways are covered with heavy rubber matting.

To insure uniform operation, an electric clock, working on the 60-cycle system, has been installed in the engine room. At the beginning of each tour it is set with an accurate spring clock. If the generating equipment runs fast or slow, the electric clock runs accordingly, and the operator can make the required adjustments. There is seldom a variation of more than two or three minutes per day.

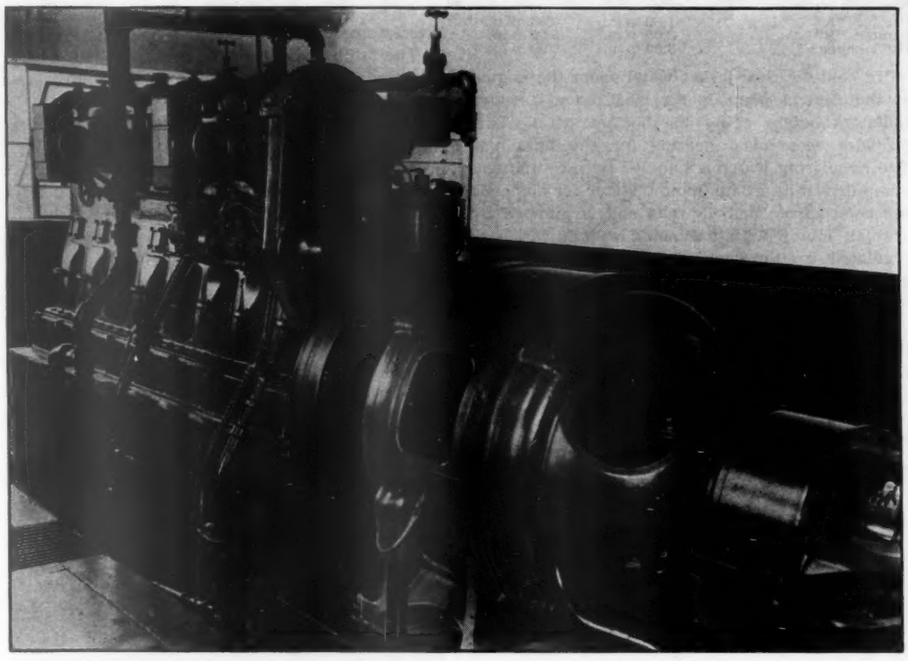
In addition to the master switch there are four distribution switches which supply the four main lines leaving the plant. In addition to the voltmeter and ammeter, which gives the total load, there is an auxiliary ammeter with selective stations so that the operator may check the amount of load in any of the four distribution lines at any time. The three switches at the bottom are for 110-volt lighting circuits, each of

Exterior of the compressor house at the original installation

Technician setting battery of extractors for core analysis



Belt tightener on the compressor on the Stanton lease



Engine, generator and exciter used at the power generating station

which is connected to a transformer. They serve the following purposes:

(*a*) Plant lighting.
(*b*) Laboratory power and heat.
(*c*) Domestic lighting for nearby houses.

An additional 440-110 transformer is used in the system and can be located at any point along the power line most convenient to any drilling

Exterior view of compressor house on Stanton lease showing electrical lines entering through conduit. Circulating tank at right

operation. This furnishes lights for the drilling rigs, thus eliminating the fire hazards of "yellow dogs," and provides satisfactory illumination for night drilling.

In the isolated compressor houses and pumping power houses four 120-volt lamps are connected in series and are controlled by a switch. This gives ample lighting without the use of a transformer.

The whole system is a "closed delta" and is not grounded. As a safety precaution and as an aid in locating trouble, a simple ground detector consisting of a four-pole switch connected to each phase buss bar and a bank of lamps connected to the ground is used. If trouble develops on any distribution line, it may be segregated at the plant so as not to disturb the other circuits while the difficulty is being adjusted or repaired.

Approximately 20,000 feet of No. 4 copper wire and 15,000 feet of No. 6 copper wire strung on poles equipped with high-tension insulators has been used in the distribution system. Ample lightning arresters have been installed and all entries to buildings and inside wiring are in conduit. The accompanying diagram shows the distributing system.

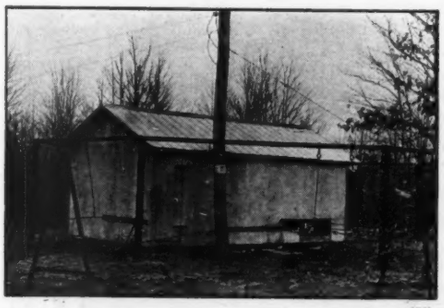
If work is being done along any of the distribution lines, the switch for the line is opened at the plant and the fuse removed as a safety precaution. Since the beginning of the operation, there have been no accidents.

Three of the electric motors drive compressors, six operate central pumping powers, one is used for pumping oil, two for water-circulation pumps and one provides drinking water for the plant, laboratory and houses. All of the larger motors are equipped with overload relays on the starter switches so that if the motors exceed the rated capacity they will automatically shut down. This safety equipment also includes a magnetic coil, which, if the voltage drops for any reason, breaks contact and shuts down the motor.

On the Zane farm, 3,200 feet from the central plant, a 35-hp. motor is driving an Ingersoll-Rand XOB 4½ by 10½ by 10 compressor. This compressor picks up the casing-head gas from wells in that immediate vicinity and returns it to the oil-producing sand, thus avoiding the necessity of transporting this gas to the central plant and redistributing it through the high-pressure system. Another similar compressor is located on the Stanton farm, 1,375 feet from the plant. Both of these compressors operate 24 hours per day and each has a capacity of approximately 200,000 cu. ft. per day. The saving in pipe brought about by these installations has amounted to nearly $5,000.

At the Stanton compressor water is circulated through the compressor by a very small air jet. It may be noted that the buildings are only large enough to accommodate the equipment, a feature which tends to conserve heat during the winter and prevents the use of the building as a storage place for miscellaneous junk. The building has a gravel floor, which requires little cleaning.

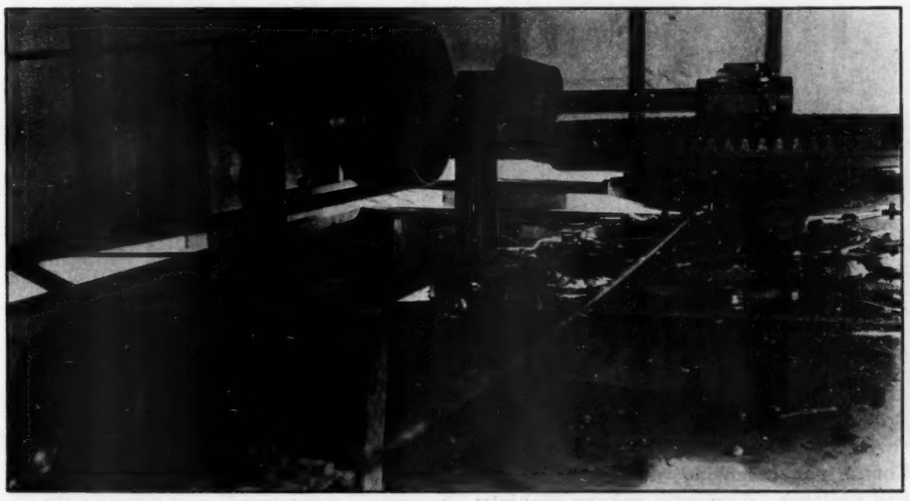
The "pickup" compressor, a duplex Gardner compressor, is driven by a 10-hp. motor, close connected on a rockwood base. This unit is termed a "pickup" because it collects gas which rises from the oil as it travels or in the stock tank and returns the gas to the sand as a repressuring medium. A novel device separates the gas from the oil and prevents the possibility of the compressor picking up a "slug" of oil at any time. Oil produced on this property is gathered through



Exterior of Stanton pumping power showing welded supports for swings and typical knock-off device

five separator tanks and flows from these tanks through the 5-inch line shown in the lower left of the picture. The oil enters the top of the lower horizontal chamber and passes out the bottom through a line which carries it to the stock tank. Gas rises from the oil through the vertical pipes to the upper chamber and thence to the compressor.

The discharge line from each compressor is



Motor and double eccentric used at the Stanton power

equipped with an explosion joint. This consists of an enlargement in the 2-inch pipe to 4 inches, a 4-inch T with a four-inch flange head. The flange is closed with thin plate, usually 26-gauge sheet iron. If the pressure should go too high and the relief valve fail to work, or if the valves in the compressor heat up due to leak or carbonization, or if an explosion should occur in the line the force would be dissipated by the blowing out of this thin plate, the weakest point. This removes the danger of injury and of damaged equipment.

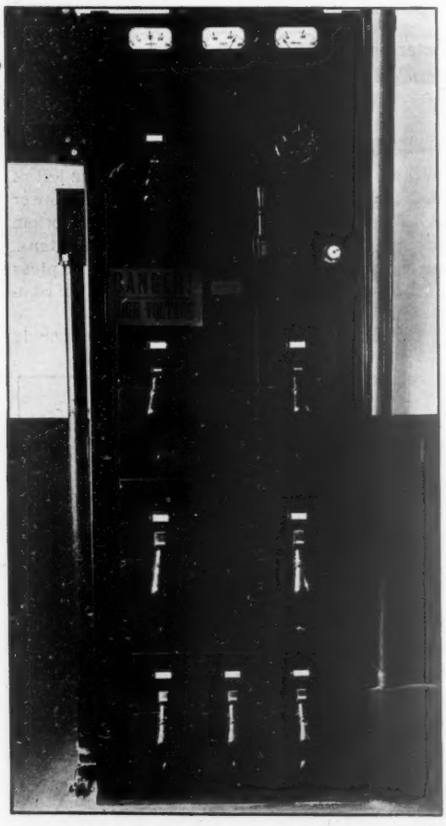
Each of the six central powers consists of a geared power with two or three eccentrics. The motor is belted to the power through a jack shaft equipped with a clutch. Regardless of temperature, the operator merely services the several lubrication points, throws out the clutch, gives one of the belts a little pull to loosen the "set" of the belt, pushes a control button, throws in the clutch and the wells are in operation. The clutch is used to avoid high starting surge in the electrical system.

The wells average about 725 feet in depth. It has been found that the average pumping requirements are about one-third horsepower per well. With double and triple eccentric powers it is relatively simple to arrange the pull rods so that the wells will be balanced and thus require minimum power. The rating of the power motor and the number of wells each power serves are as follows:

Hunter "A"	10-hp. motor	27 wells
Hunter "B"	10-hp. motor	24 wells
Campbell "A"	10-hp. motor	23 wells
Campbell "B"	15-hp. motor	47 wells
Huidekoper	10-hp. motor	35 wells
Zane	10-hp. motor	32 wells

The wells pump by heads and therefore it is possible to stagger the operation of the powers. The schedule now in effect follows:

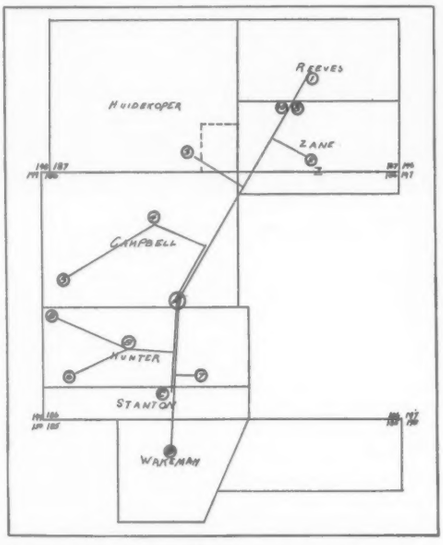
Power—	Starts	Stops
Campbell "B"	7:00 a.m.	11:00 a.m.
Zane	7:00 a.m.	12:00 noon
Campbell "A"	11:00 a.m.	3:00 p.m.
Hunter "A"	1:30 p.m.	5:00 p.m.
Hunter "B"	3:00 p.m.	5:00 p.m.
Huidekoper	3:00 p.m.	8:00 p.m.



Control panel showing voltmeter, ammeters and switches. Automatic voltage regulator is at upper left

In cold weather jacket water from the engine at the central plant is diverted through water radiators before going to the hot pond. This provides economical heating for the buildings. The circulating water is handled by a centrifugal pump driven by a 3-hp. motor. Water for domestic use comes from drilled wells and is pumped by a small motor with automatic switch which is regulated by the water pressure. Other small motors are used in the laboratory to operate a ro-tap machine, drill press and emery wheel.

In the same building with the generator are the field office, and laboratory together with washroom and shower baths. In addition to the equipment mentioned above the laboratory apparatus also includes retorts, condensers, ovens, benches, various meters and electrical instruments, Washburn-Bunting porosimeter, analytic balance, colorimeter explosion bombs, etc.



Map showing distribution lines on National Petroleum Co.'s Hunter-Campbell group property

A photograph shows Miles Blanchard setting up a battery of Soxhlet extractors for saturation determination in a routine core analysis. This is, incidentally, the only lease in this district that is equipped with its own laboratory. In addition to the routine core analyses which include determination of porosity, permeability, oil, water and vacant space content and grain size analysis, this laboratory has undertaken a considerable amount of research work. William Hershelman of Syracuse University, now of the University of Iowa, made an exhaustive study of sand grains as a factor in repressuring here. Other research problems that are being and have been investigated here include explosive mixtures, corrosion, water content of the sand and its role in secondary recovery operations, the application of heat to producing sands and the saline concentrations and characteristics of water native to the oil sands.

During the past year, "scavenger barrels," recently described in The Oil and Gas Journal, were developed as a result of work done in this laboratory. They have been placed in many of the wells which presented difficulties in the way of scale, floating sand, etc. Many of the wells are subject to regular treatment for corrosion also. Both of these items have contributed greatly toward reducing the amount of pulling and therefore have cut operating costs. The company regards the laboratory as one of its most profitable investments.

The unitized method of developing and operating this property is becoming increasingly typical in the western Pennsylvania area. Producers there are adopting the attitude that their continued existence depends upon their ability to produce at a lower cost. One factor that makes lower costs possible is the development of contiguous leases as a unit. The cost of producing oil on this property where eight leases have been developed as one is not only among the lowest in the district but is 50 per cent below the average.

Oil travels through lower chamber and gas rises through vertical pipes to upper chamber which supplies the compressor

While the property, as mentioned before, is well adapted to secondary recovery methods, the operators' constant "reduce costs" program is a large contributing factor to these lower costs. While it is not possible for smaller producers to operate individually in this manner, either cooperative or large scale development does make such a program possible.

Lion Oil Adds to Its Refinery Executive Personnel

Association of John Ward Poole of New York, consultant in petroleum technology, with the Lion Oil Refining Co., El Dorado, Ark., as assistant manager of manufacturing has been announced.

Mr. Poole has maintained offices as consultant in New York since 1936, specializing in solvent refining methods, and brings with him almost 20 years' experience from research in specialized petroleum technology.

After a year as assistant to the chief engineer of the Beacon Oil Co., Mr. Poole returned to Massachusetts Institute of Technology, from which he graduated, on a scholarship as a graduate student of chemical engineering.

In 1925 he joined the Pierce Oil Co., S.A., as assistant chemist, and the next year became chief chemist.

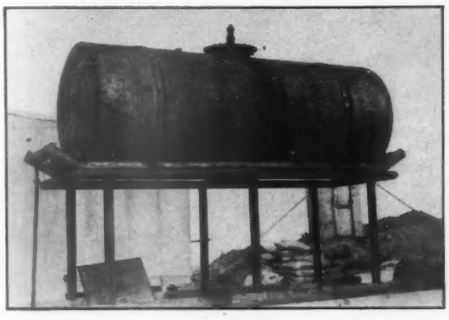
In 1927 Mr. Poole joined the staff of Massachusetts Institute of Technology and remained four years on graduate research in specialized subjects, including mathematics, thermodynamics, and physical chemistry.

For four years, beginning in 1932, Mr. Poole was associated with Foster-Wheeler Corp., where he continued research and development work on certain processes for solvent refining of petroleum lubricants, of which the initial work had been completed at M.I.T.

OPERATING IDEAS

Valve Inside of Water Tank

Instead of building a freeze box to prevent the valve on the circulating water tank from freezing in case of a shutdown, this operator simply put the valve on the inside of the tank and installed an extension on the stem.



Platform for Fuel Tank

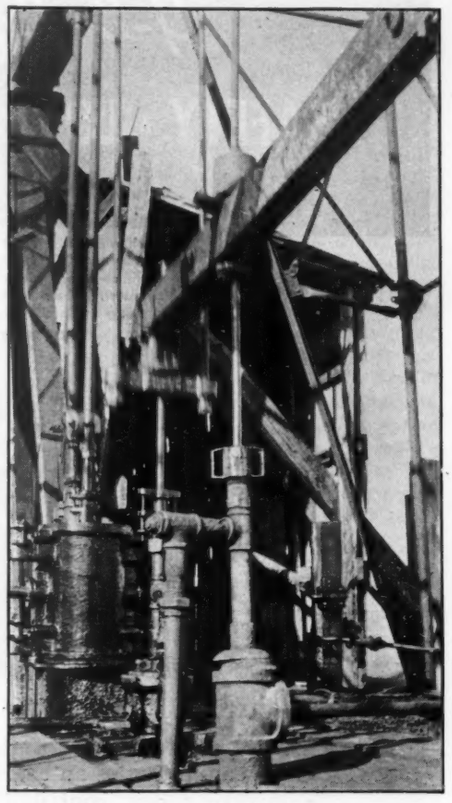
The fuel tank on a mechanical rotary rig must be at the proper height if the engines are to operate smoothly. This rotary rig in Kansas has a special platform built from old drill pipe on which the tank sets. It slides off easily when it comes time to move the rig.

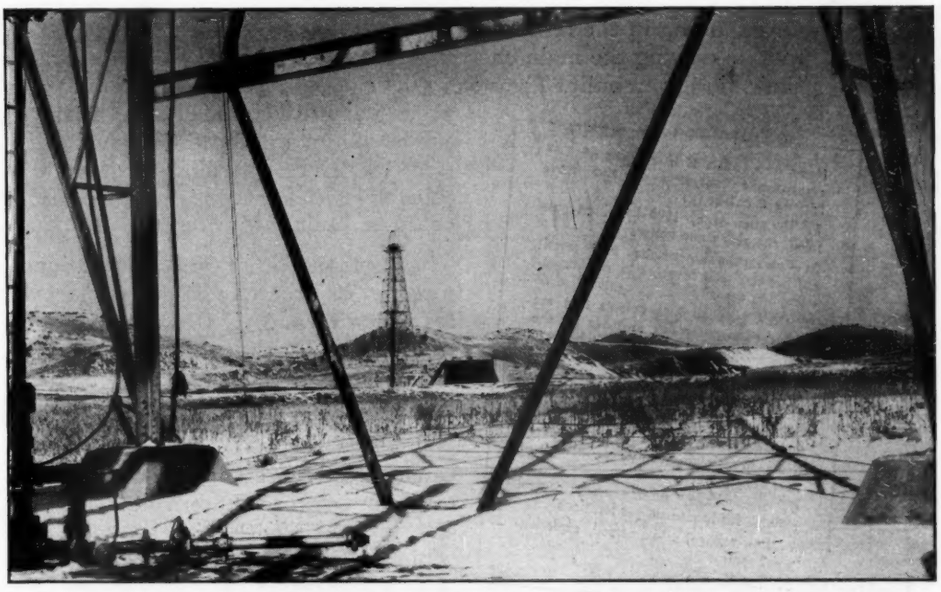
Fuel Tank for Lease Stoves

One company operating in Kansas uses a method for providing a supply of crude oil for a stove to heat the pumper's office and tool house, where gas is not available. A structure provides steps, safety platform with guard rails, and hook where a full bucket of oil may be hung while the pumper climbs steps to platform; there is also a cover with handle for the small supply barrel; the structure is fabricated by utilizing scrap pipe and sucker rods. Fuel supply is kept as far away from building as is practical.

Three Wells on One Beam

Utilization of the power generated by the single-cylinder gas engine pumping a well in the Smackover district, Arkansas, is secured by a line-up of pumps which makes the motion of the various attachments on the beam look "like a walking picket fence," as one field man put it. Besides pumping the well, through the usual yoke and straps, a water well is pumped by means of a beam, pivoted on the derrick frame and driven through a rocker bearing on top of the polish rod clamp. To equalize the load further, three pumps are mounted on the base of the frame carrying the beam, two on the well side of the pivot, and the third between bearing and pitman. These pumps, manifolded to the lease tankage lines, handle the crude from storage to the pipe line outlet. In addition to the two wells and three pumps driven individually from connections on the beam, the unit is equipped with back-side crank and stroke multiplier which, through a 90-degree swing, pumps a well on the next location on this lease.





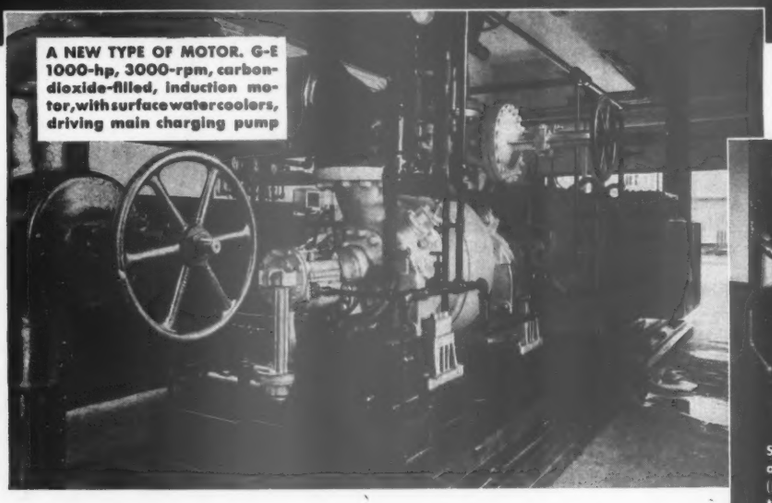
Tie Down for Well Servicing Unit

Installation of a dead-man for holding pulling units in place is often difficult and the safety factor of such installations is frequently doubtful. This operator has a novel arrangement for making the derrick hold the pulling unit in place. A V-brace made from 3-inch tubing is fastened to the bullwheel girt of the derrick. The bottom of the V is attached to a plate having two eyebolts, lateral movement of the brace being eliminated by the derrick floor. The pulling unit has an eyebolt that goes between the two eyebolts under the derrick floor and a pin placed through all three securely anchors the well servicing unit.

IN THE NEW RICHFIELD REFINERY

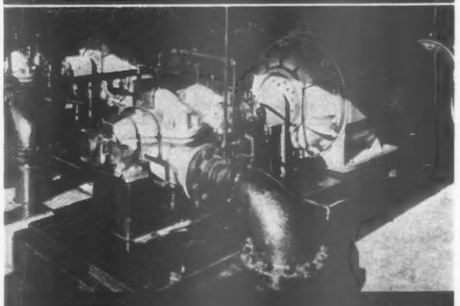
G-E Equipment Contributes to

SAFETY ★ LOW COSTS ★ CONTINUOUS OPERATION



A NEW TYPE OF MOTOR. G-E 1000-hp, 3000-rpm, carbon-dioxide-filled, induction motor, with surface water coolers, driving main charging pump

Switch room, showing (left) G-E low-voltage, oil-immersed, explosion-proof control and (right) G-E high-voltage, oil-immersed control (tanks painted black) and G-E D&W type oil fuse cutouts



G-E 250-hp totally enclosed, fan-cooled, explosion-proof motors driving pumps in the cold-pump room

G-E 600-hp and 100-hp synchronous motors and G-E 20-hp induction motor driving compressors

THE new refinery of the Richfield Oil Corporation in Watson, California provides an excellent example of how G-E equipment and engineering can contribute to continuous, safe, and economical refinery operations.

Outstanding in the refinery are the two G-E 1000-hp, inert-gas-filled motors driving the main charging pumps. These motors are the first of their kind ever built. They were developed by G-E engineers after a preliminary study had shown that thousands of dollars could be saved with electric drive, provided large motors suitable for hazardous gas locations could be built.

Here are some of the types of G-E equipment installed in the new Richfield refinery:

1. The new-type, 1000-hp, inert-gas-filled, charging-pump motors
2. Current-limiting reactors that permit the use of circuit breakers of smaller interrupting capacity
3. D&W type oil fuse cutouts that are applied as disconnecting switches for the high-voltage starters in the switch room, providing short-circuit protection where required
4. Numerous explosion-proof motors, ranging from 15-hp to 250-hp in size
5. Synchronous motors on compressors that help maintain good power-factor and thus keep power costs down
6. High-voltage, oil-immersed control suitable for hazardous gas locations
7. Low-voltage, oil-immersed, explosion-proof control
8. Transformers

The numerous other types of G-E equipment in service there likewise reflect the resourcefulness of G-E engineering and are convincing evidence of the ability of General Electric to supply electric equipment that meets not only the ordinary but also special refinery requirements.

Our nearest representative will be glad to discuss *your* requirements with you. Get in touch with him at your convenience. General Electric, Schenectady, New York.

GENERAL ELECTRIC

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RICHFIELD REFINERY

(Continued from Page 45)

installation. So that existing switching gear could remain in service, additional reactors were installed which further reduced the fault current from 50,000 to 15,000 kva. on all old equipment. The use of these current limiting reactors greatly reduced the cost of modernizing the refinery's electrical layout.

The electrical equipment provided for the new operating units differs according to the service required and according to the fire hazard existing at the point where energy is required.

At the combination crude topping and cracking, debutanizer, stabilizer, and polymerization plants the electrical equipment is explosion-proof throughout. All motors ranging in size from 1 to 250 hp. are Class 1, Group D, construction to obtain underwriters' approval for installation in hazardous areas. All motors are equipped with across-the-line starters, oil immersed disconnects located in a concrete switch-room, and explosion-proof start-stop push buttons.

In addition to the above motors, there are two 1,000-hp., two-pole, 3,000-r.p.m. across-the-line starting motors which are directly connected to the main heater feed pumps (one on each combination unit). These pumps circulate oil through the coils of the cracking heaters at rates up to 80,000 gallons per hour. To further make these motors as explosion-proof as possible, CO_2 gas is introduced into the motor housing, at a pressure slightly above atmospheric, to keep explosive gases from entering. The gas is cooled by passing it around water-cooled coils in the motor housing.

These large motors are built with the shaft extended at each end. One end is coupled directly to the heater feed pump, and the other end is coupled to a steam standby turbine which automatically picks up the load to 150 r.p.m. below the electric motor speed and continues to drive the pump through the motor.

In case of a complete power failure within the refinery, a steam-driven generator automatically goes on the line. This generator has sufficient capacity to provide current on the new equipment for instruments, motor-operated valves, emergency lights located at important points, and independently driven lubricating oil pumps for the 1,000-hp. heater feed pump motors.

There are three air compressors in the compressor plant which serve the new refinery operating units. The main 3,000-c.f.m. and supplementary 750-c.f.m. compressors are operated by 600-hp. and 100-hp. synchronous unity power factor motors, respectively. The third compressor, which is used to supply instrument air, is operated by a 20-hp. squirrel-cage motor. The large motors are controlled by standard synchronous motor starters while the small motor has conventional magnetic starter with push-button control.

There are two 400-hp. and two 250-hp., 80 per cent power factor synchronous motors with directly connected exciters serving the plant which provides water for the new units. Operation is by push-button control through synchronous starters and the oil-immersed disconnect switches.

The use of 80 per cent power factor synchronous motors in nonhazardous areas has increased the overall plant power factor to almost unity. The power factor prior to the modernization of refinery equipment ranged between 82 and 85 per cent.

In addition to the two combination crude topping and cracking units, the large Richfield construction program included cracked distillate finishing units. Such units provide for the debutanization of the raw distillate for the purpose of producing a bottoms product most adaptable for subsequent treating; the stabilization of the light ends of the pressure distillate to furnish poly charging stock consisting of butanes and lighter; the polymerization of such gaseous hydrocarbons into poly gasoline; and the caustic washing of all stabilized light ends for mercaptan sulfur removal. These operations are reflected in the flow diagram.

The raw cracked distillate as produced on the combination units includes all desirable light ends obtained by wet gas absorption at the combination units. It has an A.S.T.M. endpoint of 400° F. This distillate is fed directly to the debutanizer unit, which operates at about 100 pounds gauge pressure.

The debutanizer is of the conventional type. By flow, temperature, and pressure controlled distillation and fractionation a bottoms product having an A.S.T.M. initial boiling point of about 225° F. is produced. This bottoms product, which is relatively high in sulfur content, is routed through treating and rerun operations for finished gasoline conditioning.

The debutanizer liquid overhead, which contains all of the butanes and lighter from the cracking operation, is fed to the stabilizer. This unit is also of the conventional type and operates at 200 pounds gauge pressure. Distillation and fractionation, obtained by careful flow, temperature, and pressure control is carried on to produce a butane free bottoms product known as casinghead and a gaseous overhead which contains all of the butylenes and propylenes.

Heat required for this stabilization is furnished by a circulating heat medium from combination unit source, and from high pressure steam.

The stabilizer release gas, because of its high hydrogen sulfide content of approximately 5 per cent, must be processed in a gas treating system before it passes on to poly plant. This is done to avoid the production of a poly gasoline high in fixed sulfur content. The tri-potassium phosphate process, operating at 200 pounds gauge pressure and about 185° F., is used for this purpose. Better than 90 per cent of the hydrogen sulfide present in the gas is removed by this process.

Gas Treating System

The gas treating unit consists of an H_2S absorber and a solution reclaiming system. The gas passes upward through the absorber, countercurrent to two concentrations of tri-potassium phosphate solution. The use of two concentrations of solution enhances the efficiency of the operation. The foul solution is run from the bottom of the absorber to the reclaiming system where it is heated at substantially atmospheric pressure to drive all hydrogen sulfide overhead. Indirect, high-pressure steam is used. The hot reclaimed solution is routed through a surge tank and foul solution heat exchange to the absorber. Part of the reclaimed solution is diluted for top absorber introduction, and the balance is introduced directly to a lower absorber entry. The overhead hydrogen sulfide and steam mixture is partially dehydrated and then disposed of by burning in a refinery furnace. The condensed steam is utilized for dilution of reclaimed solution.

The treated gas is passed through a dehydrator

(Left) Hot oil pump room serving combination units.—(Below) Pump room of polymerization plant

system which has been installed to prevent any possible phosphate solution carryover to the poly plant catalyst towers.

The hydrocarbon release gas from the H_2S unit dehydrator, containing approximately 35 per cent higher olefins, now passes into the catalytic polymerization equipment where the propylenes and butylenes in the gas are converted to polymer gasoline.

Polymerization Unit

The poly plant equipment can be classified under two services: One section of the plant is used for producing the polymer gasoline and stabilizing it to a desired vapor pressure, whereas the other section is used to reactivate the catalyst.

Equipment used for polymerization and stabilization consists of a process heater, five catalyst towers, water separator, raw poly condenser and receiver, and polymer stabilizer equipment. This stabilizing equipment is also of the conventional type.

Equipment used for reactivation of the catalyst includes a flue gas generator, flue gas scrubber, and superheater. The latter piece of equipment serves as a superheater for both the flue gas during burning of the catalyst and for steam during the hydration of the catalyst.

The polymerization of cracked gas employs process heater outlet temperatures ranging from 350° to 425° F., maximum catalyst temperature of 500° F., and operating pressures ranging from 160 to 200 pounds gauge. The products of polymerization are processed in a stabilizer operating at 200 pounds gauge pressure and controlled similarly to the other stabilizer herein described. The overhead is a gaseous product and is released into the refinery fuel system.

Each of the catalyst towers is periodically taken out of polymerizing service for reactivation. This is accomplished by first passing flue gas obtained by perfect combustion at 30 pounds gauge pressure, dehydrated by cooling and preheated to 700° F., through the catalyst together with carefully controlled small successive increments of air for removal of carbonaceous matter by burning. When this operation is complete, superheated steam is passed through the catalyst bed for the purpose of properly conditioning the catalyst with respect to moisture content.

Polymer gasoline of the desired vapor pressure and cracked casinghead are mixed as made and thence passed through the caustic wash unit. This operation serves for the removal of about 75 per cent of the mercaptans present, and thereby materially decreases the load on the gasoline sweetening system.

The combined products are intimately mixed with about an equal volume of dilute caustic solution and the mixture settled in a separator. The gasoline from this separator is routed directly to the finishing operation. The spent caustic solution is steam stripped and returned for reuse after cooling. Mercaptans removed by stripping are disposed of by burning.

Debutanizer bottoms, after treating and rerunning, plus the caustic treated casinghead and poly stock are blended and subjected to a final sweetening operation which results in a finished gasoline.

Safeguards

The design and construction of the new refinery presented many problems other than those directly connected with the processing of crude. No effort was spared in attempting to solve problems dealing with safety for operators.

On the top of the deFlorez heaters a continuous walkway, with insulated floor plates and insulated sides about 5 feet high, runs the entire length of the line of heaters.

Several motors on fans and water pumps are installed at quite a distance from the control room. Since it is necessary that operators know instantly in case of failure, tell-tale lights are installed on the instrument board to indicate that the motors are in operation.

Special-Built Richfield Motor Runs in Atmosphere of CO_2

By R. E. JOHNSON
Commercial Engineer, General Electric Co.

A new type of inert gas-filled 1,000-hp. induction motor was developed by the General Electric Co. for the recently completed Richfield Oil Corp. refinery unit at Watson, Calif.

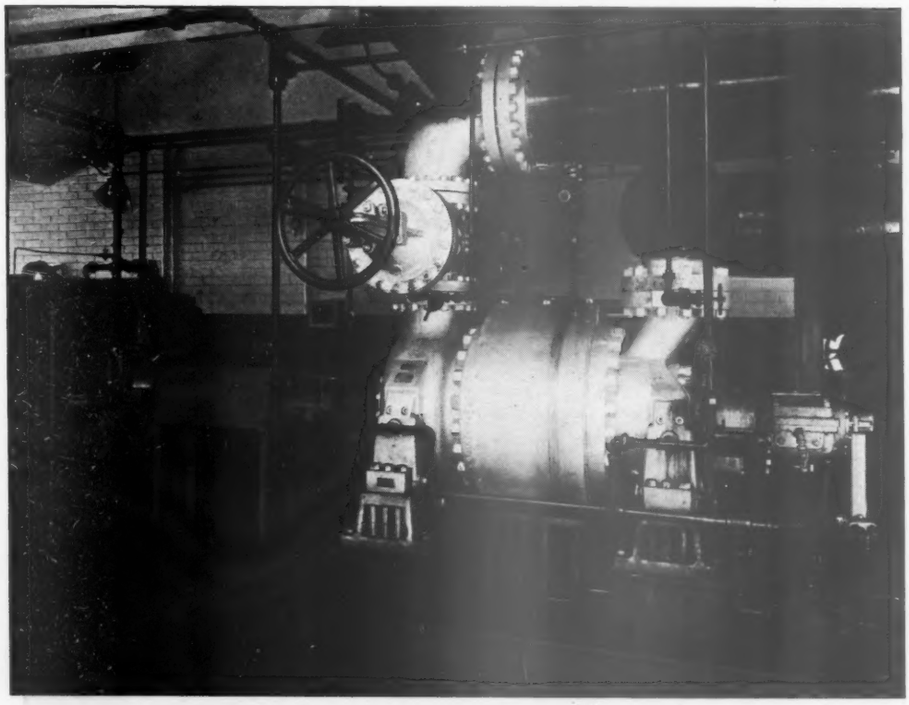
With an estimated total new load of 14,000 hp., the problem of suitable drivers assumed importance. Reciprocating engines, steam turbines and electric motors were accorded due consideration, with the ultimate selection of electric motors for main drives, and some steam turbine stand-by drives. A good record for continuity of service, and an average available power rate of .006 dollars per kilowatt-hour by the local utility was prime consideration in reaching this decision.

The new plant was divided into four main units as follows:

1. Combination crude topping and cracking plant.
2. Debutanizer-stabilizer and treating plant.
3. Compressor plant and treating plant.
4. New water pumping and cooling plant.

Considering first the motor installations for these four units, it was determined that all motors would have to meet the requirements of a Class 1 hazardous location with the exception of those operating in the compressor plant, water pumping and cooling plants. The two hot oil charging pumps each required a driver rated 1,000 hp. for mounting in a hazardous area. An investigation disclosed that the use of motor drives on these two 1,000-hp. pumps would save approximately $40,000 compared to the cost of steam turbine drives with the necessary additional boilers. A constant speed induction motor was favored for each of the 1,000-hp. applications, with a stand-by steam turbine direct connected to the other end of the motor shaft so adjusted to take the load from the motor at approximately 95 per cent of the full load motor speed. This turbine arrangement would permit taking the charging pump load at approximately 2,800 r.p.m. and gradually slowing down the unit at reduced capacity, or slowly bringing the pump unit up to speed as the case might be.

Totally enclosed fan-cooled construction induction motors were available at a maximum rating of about 400 hp. for operation on 2,300 volts, three phase, 50 cycles for such a hazardous location, leaving an alternative of the base-ventilated type of induction motor as about the only other available developed type. The long air ducts and difficulty of supplying an adequate amount of fresh air for this type of motor rendered its use inadvisable. The General Electric Co. solved the problem by developing and proposing an "inert, gas-



Special-built 1,000-hp. motor at left drives hot oil pump in foreground. The motor housing is held under a slight pressure of carbon dioxide

filled induction motor," driving an Ingersoll-Rand hot oil charging pump.

A totally enclosed motor construction filled with carbon dioxide fully complies with the Richfield Oil Corp. conservative policy of complying with the spirit of the National Board of Underwriters and electrical safety orders issued by the California Industrial Accident Commission.

The motor is equipped with two surface air coolers, one mounted as an integral part on each side of the motor. Carbon dioxide is used in the closed system of ventilation at a pressure slightly above atmospheric which is maintained by a pressure regulating valve. This noninflammable gas is circulated through the stator slots and ventilating passages in an axial direction by means of internal fans and suitable deflectors. Positive seals at the shafts and bearings mean that only one 50-pound cylinder of carbon dioxide is required approximately every two weeks.

Cooling water at approximately 75° or 80° F. is circulated through the surface coolers at each side of the motor to remove the heat from the carbon dioxide gas circulated through the tubes of these coolers, maintaining the gas at approximately 40° C. or below.

Positive pressure lubrication is supplied to the motor bearings from an oil sump by separate electric motor driven oil pumps. This supply of oil provides both bearing lubrication and a seal against the escape of the carbon dioxide gas.

The oil sump is a separate tank having a vertical partition which divides the tank into two chambers connected by a small hole through the partition. Oil is taken from this sump by the motor driven oil pump, and delivered to the bearings through a hole drilled up through the end shield and the bearing seat entering the journal at the horizontal split of the bearing lining. The oil flows over the journal in the direction of rotation and spreads to the ends of the bearing where it is collected and returned to the sump, the oil from the inside end of the bearing being returned to one chamber of the sump, and the oil from the outside end of the bearing being returned to the other chamber of the sump. The divided sump allows proper lubrication of the bearing by maintaining one chamber of the sump at the internal pressure of the carbon dioxide atmosphere in the motor. A separate flow of oil through a needle valve to an annular space around the shaft of the bearing further insures a good gas-tight seal. Bearings are of the insulated type to prevent any possibility of shaft currents, and have spherical seats.

Two oil pumps are provided for each 1,000-hp. inert gas-filled induction motor, either one of which has ample capacity to supply oil for normal operating conditions. In case of a power failure, the motors driving the lubricating oil pumps would immediately receive power from a turbine-driven generator unit acting as a stand-by which furnishes power through an automatic throw-over panel. Due to the totally-enclosed construction. these motors are exceptionally quiet operating and free running. When disconnected from the load, the motors will coast for approximately 15 minutes after the power is disconnected before coming to a standstill. The noise of whistling air usually associated with 1,000-hp. high-speed motors of ordinary construction, is noticeably absent in these carbon dioxide-filled totally-enclosed motors. They are the first carbon dioxide-filled motors of this rating ever built, and have the largest horsepower rating of any motors driving pumps in California refineries.

Most of the totally enclosed fan cooled Class 1, Group D motors range from 50 hp. to 250 hp., all motors over 50-hp. being rated 2,300 volts. Motors smaller than 50-hp. are rated 440 volts.

Synchronous motors were selected for the water pump, compressor, and fan drives located outside the hazardous areas. A power-factor clause in the schedule of the utility makes possible a rebate on the monthly power bill for average power-factor maintained above 70.7 per cent, the maximum discount allowed being 10 per cent of the monthly power bill. This clause, together with the fact that the drives selected for synchronous motors operated almost continuously, made advisable the use of synchronous motors rated 0.8 power-factor leading. Subsequent operating data show an exceptionally high value of average power-factor for this plant.

Combination unit switch room at Richfield Oil Corp.'s Watson refinery

Electric power for this new refinery unit, as well as for the older part of the Richfield Oil Corp. refinery, is supplied by the utility through nine 1,000 kva. 11,500 volt/2,300 volt single-phase 50 cycle transformers arranged in three parallel banks of three transformers each. The utility has power available to serve the primary of these transformers from three separate substations, assuring continuity of service.

This power service carried with it a short circuit interrupting capacity of 66,200 kva., which was reduced to a value of 40,000 kva. by the Richfield Oil Corp. on the secondary side of the transformers by an installation of reactors. A further reduction of interrupting capacity to a value of 15,000 kva. was accomplished by a second reactor installation for the power used to serve the older existing part of the refinery. This second reactor installation made it possible to retain the electrical equipment in the older part of the refinery without change.

From the 40,000 kva. interrupting capacity bus, four separate feeders are installed to the combination unit switchboard, any three of which are sufficient for the normal operating load if necessary. Each of these four feeders consists of the two 3-conductor 300,000 circular mil paper-insulated lead-covered cables protected by a clay duct buried in 3 inches of concrete. Protection is afforded these feeder circuits by induction over-current and reverse power relays.

These four feeder circuits run approximately 1,200 feet and terminate in a long narrow room, each through two circuit breakers, one of which serves as a manually operated disconnect, and the other as protection. Both circuit breakers for each feeder have 50,000 kva. interrupting capacity. The combination unit switchboard room before selection as such, was a long narrow area 105 feet by 13 feet lying between the control room and the cold and hot pump rooms. This area was entirely enclosed except for the ends, and while in a semi-hazardous Class 1-B area, the fact that it required only walls at the ends made it less expensive to utilize as a switchboard room than if a separate building were constructed at a more remote point, even taking into consideration the fact that explosion-proof starters and disconnects would be required.

The 2,300-volt starter equipments receive power from the enclosed 2,300-volt 3-phase bus running the length of the room from the four feeder circuits coming from substation No. 1 to provide oil immersed disconnecting facilities and circuit protection.

Each 2,300-volt induction motor with the exception of the two 1,000-hp. motors, receives power from this enclosed bus through oil fuse cutouts equipped with reactive links having 40,000 kva. interrupting capacity. The corresponding motor starters are of the oil-immersed construction with all contacts and connections at least 6 inches under oil. A simple lowering device provides easy access to these starters for inspection purposes. The cutouts with the reactive links will open a short circuit in from one-half to 1½ cycles.

Power service to the two 1,000-hp. inert gas-filled induction motors is taken from the 2,300-volt bus through cutouts. These cutouts, equipped with copper straps instead of fuses, provide oil immersed disconnecting facilities. From the cutouts, full voltage magnetic starters take the power to the motors. These starters have 50,000 kva. interrupting capacity, and in addition to providing their own short circuit protection, provide overload and under-voltage protection for the motor. The contactor is a 3-pole latched-in device with double-break, butt-type contacts, and the oil blast principle of arc interruption is responsible for the high interrupting rating. Short circuit protection is provided by three series, magnetic instantaneous over-current trips that act directly on the contactor latch. Overload protection is provided by two induction thermal overload oil-immersed relays, as are all the other oil-immersed General Electric starters used at this new refinery.

Practically all motors are controlled by means of explosion-proof "start" and "stop" push button stations located at the respective motors for accessibility to the operators.

A second bank of three 50-kva. 2,300-volt 115-230 volt single-phase 50-cycle transformers supply power for lights on auxiliary control purposes in the new unit, from a location outside the hazardous area.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Saybolt Numbers With Equivalent Descriptive Terms

I would appreciate knowing the exact color ranges of "water white," "prime white" and "standard white" in terms of Saybolt Chromometer numerical values. As I get it the water white ranges are from 25 to 21, prime white from 16 to 20 and standard white from 15 to 5.—H. E.

The color designations of the Saybolt Chromometer are numerals indicating shades of petroleum liquids obtained when examined under specified conditions with this instrument. The descriptive words "water white," "prime white," and others, were introduced by the original Standard Oil Co. for marketing purposes to indicate maximum color depth having an exact meaning on the numerical scale of the Saybolt instrument.

An excellent discussion of the several schemes for color determination of petroleum products is that of T. G. Delbridge in Day's Handbook, from which the following table is arranged.

COLOR OF PETROLEUM PRODUCTS

Saybolt Chromometer		Potassium dichromate	
Disc No.	Height of color liquid, No. inches	mg./liter with 1% H_2SO_4	Descriptive term
1	12 +21	5.6	Water white
1	6.25 +16	10.5	Prime white
2	4.75 + 1	28.0	Standard white
2	2.75 —11	....	Lily white
2	1.125 —24	....	Cream white
2	0.125 —32	....	Extra pale

The data in the table explain each term. Water white color, for example, means the color tint of the liquid which when examined in the Saybolt Chromometer with one disc in the comparison tube, will match when the depth of the liquid is 12 inches. This is a color number of +21 and is the equivalent of a potassium dichromate solution containing 5.6 milligrams of the pure salt and 1 per cent sulfuric acid per liter.

The color numbers and descriptive terms have exact meanings, so do not have a spread or range. It is the trade practice to consider the color specification mentioned in a contract to be satisfied if the color of the product delivered is better, that is lighter than that specified. This means the delivery of a +23 color kerosene would meet a specification of +21. However, one could not expect to obtain a +25 color under a +21 specification. If the specification were "standard white," which is +1 with two discs, the shipper might furnish a lighter color, such as +2 or +3, but he could not be expected to ship +15 color.

Reference: Handbook of the Petroleum Industry by David T. Day, Page 663.

Specifications for n-Heptane by Bureau of Standards

We desire to obtain very close specifications covering the properties of isooctane and normal heptane. If you can furnish this information it will be of much assistance.—E. H.

The investigations of normal heptane by Donald B. Brooks, National Bureau of Standards, have indicated the physical properties required to obtain normal heptane of highest purity.

This specification is intended to limit the impurities allowable in *n*-heptane certified for use as a primary standard for knock rating so that differences from one lot to another shall not be appreciable by engine testing.

To be certified for use as a primary standard reference fuel for knock rating, *n*-heptane shall have an octane number, when compared with pure *n*-heptane, of not less than —0.2 nor more than 0.2 and proportionately for blends with pure isooctane.

For the present, material submitted for compliance with this specification shall be deemed acceptable when the following tests made by the National Bureau of Standards show its physical properties to be within the following limits:

1. The initial freezing point shall not be lower than —90.78° C. when determined by the apparatus and method given in National Bureau of Standards Scientific Paper No. 520, except that a platinum resistance thermometer shall be used in place of a thermocouple.

2. The boiling point shall be determined by distilling 100 ml. of the sample through a 10-inch jacketed column, a platinum resistance thermometer being inserted so as to measure the condensation temperature of the vapor. Current through the jacket heating coil shall be adjusted so that the reflux from the thermometer shall be five to six drops per minute, and the still-pot heater shall be adjusted to cause distillation to proceed at the rate of 5 ml. per minute. Under these conditions, when 50 per cent has been recovered, the temperature, corrected to an atmospheric pressure of 760 mm. Hg. in accordance with the equation of Dr. E. R. Smith, shall be between 98.38° C. and 98.49° C. Furthermore, the increase in the temperature so indicated when 80 per cent has been recovered over that when 20 per cent has been recovered shall not exceed 0.2° C.

3. The density of the sample when measured at 20° C. shall be between 0.68370 and 0.68390. Its refractive index measured at 20° C. by the D line of sodium shall be between 1.38770 and 1.38785.

References: Donald B. Brooks, J. Research, 21, 847, 1938. Smith equation, J. Research NBS, Vol. 20, No. 5, pages 641-650 (1938).

Note—Specifications for isooctane are printed in this issue.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Isopentane

(Butane 2-methyl)

Use—Increasing octane value of motor fuel.

Form—Colorless liquid.

Formula—$(CH_3)_2.CHCH_2.CH_3$.

Specific gravity—0.6395.

Melting point— —255° F.

Boiling point—82° F.

LIMITATIONS

Specific gravity	0.639
Boiling point, °F.	81 to 83
Octane rating, min.	90

Hydrocarbon Gases in Organic Solvents vs. Ammonia in Water

I desire to know which one of the hydrocarbon gases can be dissolved or absorbed at atmospheric pressure in any liquid or solid in largest percentage by volume. It is my understanding that water will absorb 800 times its volume of ammonia gas. Do you know of any other gas that can be dissolved or absorbed by a substance in larger quantities than water absorption of ammonia?—O. F. H.

The hydrocarbon gases are in general easily soluble in both alcohol and ether, the proportions increasing with molecular weight. The solubilities of the lower hydrocarbons are shown in the table.

SOLUBILITY OF HYDROCARBONS

(Volumes Soluble per 100 Parts Solvent)

Hydrocarbon—	Alcohol	Ether
Methane	52	91
Ethane	46	....
Propane	790	926
Butane	1,813	2,980

These data are based on normal atmospheric pressures and temperatures. The proportions would increase under pressure and low temperatures.

Ammonia is soluble in 100 parts of cold water, 32° F., to the extent of 104,960 parts and 72,722 parts at 60° F., indicating a much higher solubility than the hydrocarbons in the organic solvents named. However, it should be noted that in the case of ammonia there is chemical union of the ammonia and water to form ammonium hydroxide, which behaves as a compound. The hydrocarbons are loose mixtures in the solvents.

Chemicals Having High Octane Rating and Their Market Price

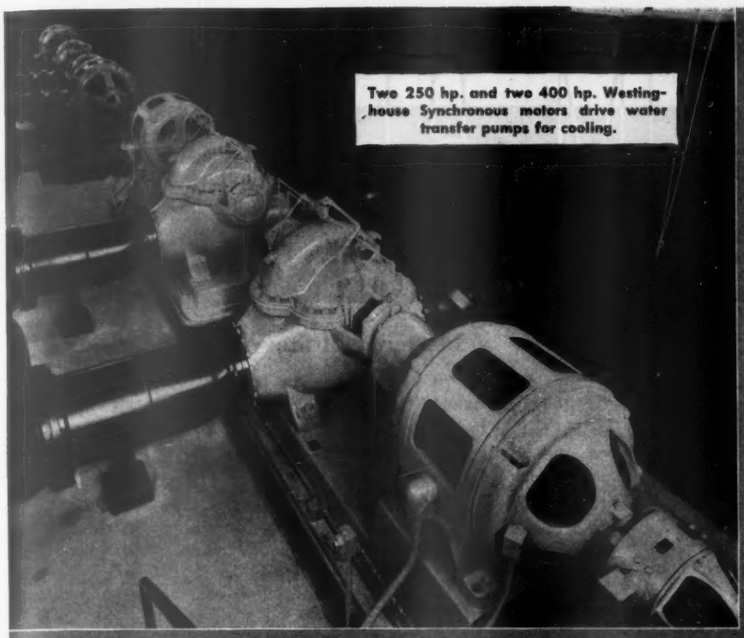
A list is desired of the chemical compounds having high octane values which may be used for motor fuels. Please give the market price of each one.—T. R. L.

The compounds mentioned in the table may be considered as possible motor fuel substitutes for gasoline; also, as antiknock blending agents to raise the octane rating of some gasolines. However, the present market price is so much higher than for gasoline that none may be expected to be extensively used for motor fuel in the near future.

Fuel—	Octane No., C. & R. method	Price/gal. (approx.)
Acetone	100	$0.39
Alcohols:		
Ethyl	99	.34
Methyl	98	.40
Benzene	100+	.16
Ethyl benzene	96	.86
Isooctane	100	.25
Isopentane	90	.16
Isopropyl ether	98	.29
Methylethyl ether	99	(*)
Toluene	100+	.27
Xylene	100+	.31

*Methylethyl ether is not available in large quantities.

The prices stated are based on tankcar lots at point of origin, as quoted by responsible producers. At this time the compounds ethyl alcohol and benzene appear to be the only ones that are utilized as motor fuels. They are added to gasoline in relatively small quantities, especially for increasing antiknock value.



Two 250 hp. and two 400 hp. Westinghouse Synchronous motors drive water transfer pumps for cooling.

C. F. Braun and Company, General Contractors.

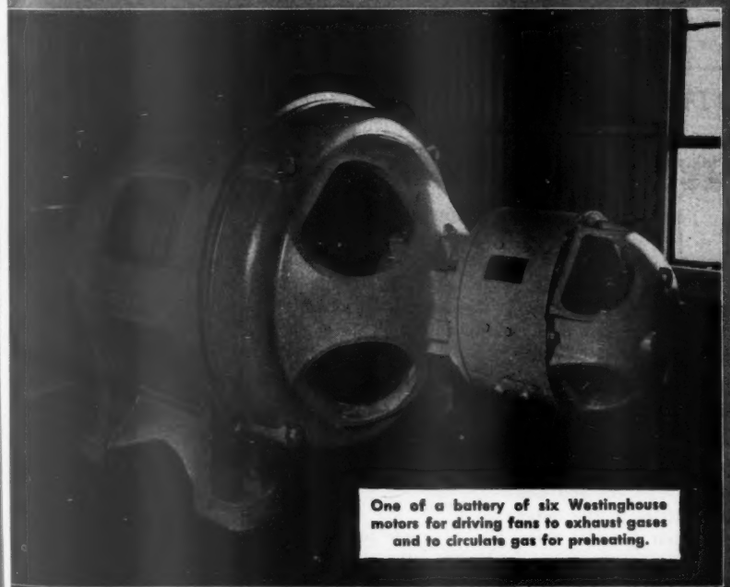
Westinghouse AB Breakers protecting various electrical circuits.

IN RICHFIELD'S *New Refinery*

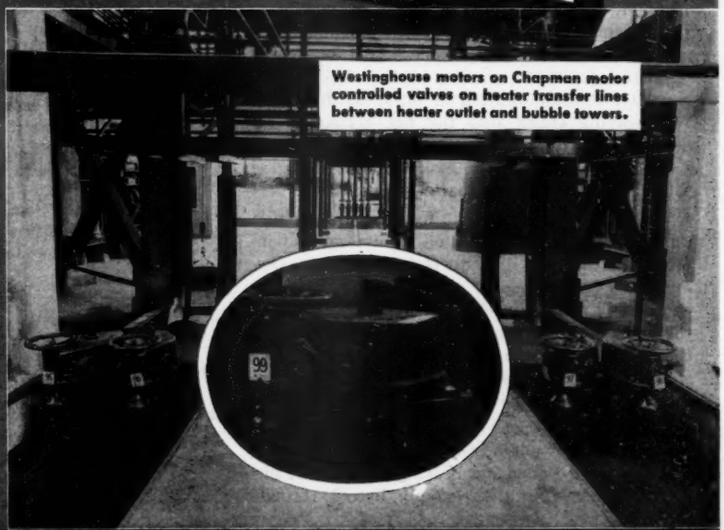
The immediate success of Richfield's new 50,000 barrel refinery at Watson, California was due to the close co-operation among owners, contractors and suppliers. For Westinghouse, this working partnership idea is an everyday affair. Whether the job calls for a complete electrification, or a single safety switch, you will find Westinghouse engineers co-operating with representatives of the petroleum industry, their engineers, contractors and suppliers —to deliver and apply power dependably and economically.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
East Pittsburgh, Pa.
Local offices in all important petroleum centers

J-94019



One of a battery of six Westinghouse motors for driving fans to exhaust gases and to circulate gas for preheating.



Westinghouse motors on Chapman motor controlled valves on heater transfer lines between heater outlet and bubble towers.

Westinghouse

W
WESTINGHOUSE ELECTRIC

ELECTRICAL PARTNER OF THE PETROLEUM INDUSTRY

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Lubricants for a High-Speed Diesel Should Be Chosen With Caution

It is quite plain that the lubricant for a high-speed Diesel engine should have qualities that are not demanded by a good deal of other machinery. I am interested in this subject and I would appreciate such suggestions as you might be able to give concerning the selection of a proper lubricant for a high-speed Diesel.—E. T. N.

The high-speed Diesel has made fast progress in the last few years. Its wider use in the oil industry and other fields has led refiners to make a special study of its lubrication needs. This department is indebted to W. W. G. Godron, of the Socony-Vacuum Oil Co., for the following discussion of the subject in response to your request:

In considering the high-speed Diesel engine it must be appreciated that high crankcase temperature is one of the most potent factors in the oxidation of lubricating oil.

Complete combustion of fuel is far easier of attainment in the moderate-speed unit than in the high-speed by reason of the time factor. An engine operating at 250 r.p.m., for example, has about one-eighth of a second to inject, ignite, burn the fuel, and expand the gases of combustion; whereas an engine of 1,000 r.p.m. must go through this cycle in one-quarter the time, or 1/32 of a second. Incomplete combustion, especially in the high-speed units, places a severe burden on the lubrication oil, due to greater contamination.

The high-speed engine naturally has a high horsepower output for its cylinder size. Add to this a small oil capacity (about 5 gallons for an engine of 100 horsepower), a hot crankcase (sometimes 200° F. or more), inadequate oil-cooler capacity, fine atomization of oil from the rapidly revolving crank into the hot crankcase air and mediocre oil clarification, and it will be appreciated why oils once excellent Diesel-engine lubricants may be inadequate for this group.

Operating troubles resulting from combustion difficulties and lubricating oil failures are so interrelated that it is difficult to isolate them. However, if a lubricating oil resists to the maximum degree any change in character during operation, then the user is assured of minimum trouble in the form of excessive sludge in the crankcase and stuck piston rings and valves, in so far as the lubricating oil can be a contributing cause.

All the high-speed automotive Diesels and many stationary engines are designed to use the same oil for cylinder and bearing lubrication, the cylinders receiving their supply by oil thrown from the revolving cranks.

Knowing that only thin films of lubricating oil stand between efficient operation and serious failure, it becomes of the greatest importance that oils for Diesel circulation systems should satisfy the most severe requirements in order to assure reliable operations. They should possess, in addition to qualities specified for power cylinder oils:

(*a*) High chemical stability: A valuable characteristic, by which certain oils resist the destructive influence of continued circulation with solid and liquid impurities, and of agitation in the presence of air. This characteristic largely determines the durability of an oil, and can be attained only in high-quality oils especially refined.

(*b*) Ability to separate readily from solid impurities and water: It is this property which guards against the formation of sludge and emulsions, and which protects bearings from the inevitable destruction that occurs when such impurities clog the oil pipes and shut off the oil supply.

(*c*) Correct body and fluidity by which is assured the maintenance of effective lubricating oil films under the most severe operating conditions.

Casing Program

I am interested to know what size rotary drills are used at top and bottom in drilling a well, say, 6,000 feet deep; diameter of hole and size of casing at top and bottom.—G. E. J.

A typical casing program for Oklahoma City field is as follows: 300 feet 16-inch 65-pound A.P.I. casing in 20-inch diameter hole; 5,200 feet 9-inch 40-pound A.P.I. casing in 12-inch diameter hole; 6,500 feet 7-inch 28-pound A.P.I. casing in 9-inch diameter hole.

On the Gulf Coast the casing program may be: 1,200 feet 13⅜-inch 48-pound A.P.I. casing in 15-inch hole; 4,000 feet 9⅝-inch 36-pound A.P.I. casing in 12-inch hole; 5,600 feet 7-inch 26-pound A.P.I. casing in 9-inch hole; 6,000 feet 4½-inch 16-pound A.P.I. casing in 6⅝-inch hole.

There are many other casing programs but the drilled hole is usually from 2 to 3 inches greater in diameter than the outside of the casing to be run.

Directional Drilling

Will you mail me data concerning whipstocking and the procedure of slant hole drilling and description of the devices and equipment?—R. E. L. J.

You are referred to the following articles on directional drilling:

"Theory and Practice of Directed Drilling," by R. E. Allen, A.I.M.E. transactions, 1934, Page 34.

The Oil and Gas Journal, August 21, 1930, Page 38.

The Oil and Gas Journal, December 7, 1933, Page 23.

"Directed Drilling," Science of Petroleum, Volume 1, Page 144.

"Directional Drilling," Chapter 18, "Rotary Drilling Handbook," by J. E. Brantly.

As you are a subscriber to The Oil and Gas Journal you will find other articles in the index covering this general subject and some of them give details of methods used.

The technique of directional drilling varies with conditions and it is usually necessary to leave the details to the drilling contractor in charge of the well or engage specialists in this line of work to supervise the work.

Directional drilling has been used for many purposes and has been developed so that it is possible to bottom a drilled hole very close to any predetermined place underground. To do this, however, requires the use of some special tools and instruments and it is therefore good practice to engage the services of companies who specialize in this kind of work.

Meaning of the Word "Fourble"

Will you please advise me the meaning of the word "fourble" which I find mentioned in many reports carried in The Oil and Gas Journal? How does the size in fourbles compare with the size expressed in barrels?—E. N. L.

This term is used in rotary drilling practice to indicate the number of joints or lengths of drill stem that are joined together. In running the drill stem into and out of the hole it is customary to connect them with couplings or "tool joints" and for convenience after the first run into the hole the drill stem is unscrewed at every third or fourth coupling and the three or four joints of drill pipe placed in the corner of the derrick. In this manner the drillers have come to refer to the lengths of drill stem as "thribbles" or "fourbles" depending upon whether they contain three or four joints of pipe. As each length of drill pipe is about 20 feet, four lengths measure between 80 and 90 feet and in the usual 122-foot-high steel derrick they can be stood in one corner very conveniently. Up in the derrick about 70 feet from the floor, planks are placed upon which the derrick man will stand while the pipe is being pulled out or run into the hole. This is called the "fourble board."

In making drill-stem tests, that is testing the well with a device which is set with a packer near the bottom of the drilled hole and a valve manipulated so that oil or water in the formation below the packer can enter the inside of the drill stem, the drillers measure the volume of fluid accumulated in a given time by the number of joints up from the bottom that are filled with fluid. In this way a report may be received that the well made a "fourble" of oil in 20 minutes, indicating that the lower four joints of drill pipe above the formation tester filled with oil after the valve had been opened for 20 minutes. The inside diameter of the drill pipe determines the volume of the oil, but this calculation is not usually made because practice and custom has trained the drillers to make a pretty close guess as to whether the formation tested will be commercially productive or not by the manner in which the oil flows into the drill stem through the formation tester valves.

Volume Per Pressure Decline

Can you tell me where I can get a table to compute the probable volume of gas a well will still produce figuring the original rock pressure and the rock pressure still left on the well, taking into consideration the volume of gas the well has produced?—J. C. R.

A simple method of estimating a gas reserve by knowing the volume produced per pound of pressure decline is given in Dorsey Hager's book "Practical Oil Geology" as follows:

"Example: A field initially has a pressure of 1,500 pounds per square inch. It now has a pressure of 1,200 pounds and has produced to date 25,000,000,000 cu. ft. of gas. What was the total volume of gas originally?

"The pressure decline is 300 pounds. Therefore, original volume/25,000,000,000 = 1,500/300, and the original volume = 125,000,000,000 cu. ft."

Knowing the original volume and the volume produced it is a simple matter to calculate the volume remaining in the reservoir.

FIELD OPERATIONS

Summarizing the Week's Developments

KANSAS—A Topeka lime discovery well was completed in the Ainsworth pool, Barton County. A well in the Zenith pool, Stafford County, made a potential production of 4,728 bbls. of oil daily. A well extending the Allon pool, Russell County, one-half mile southward, was completed for a potential of 2,992 bbls. Eight wildcats have been reported in the Forest City basin, in Kansas, Missouri and Nebraska, ranging from locations to drilling wells.

NEBRASKA—A wildcat 2 miles southwest of Hastings, Adams County, found Arbuckle lime dry at 3,886 feet and was abandoned at 4,005 feet, total depth.

OKLAHOMA—The twenty-first producer in the Ramsey pool, Payne County, was completed for a potential of 10,135 bbls. of oil and extended production one location northward. A wildcat near Newalla in Oklahoma County was reported checking high structurally, resulting in a royalty trading spree.

TEXAS—The McCampbell field in Aransas County, lower Gulf Coastal Texas, was extended 3,000 feet and is now within 1,000 feet of the city limits of Aransas Pass which will undoubtedly be subjected to a townsite drilling campaign. Twenty-seven permits had already been issued. A fourth producing horizon has been found in La Rosa field in Refugio County. An oil sand was being tested in the Goodykoontz gas and distillate area in Harris County. The best well yet completed in the League City field, Galveston County, started at 1,074 bbls. per day through choke. A 5,000-bbl. well is reported in the Griffin pool in Jones County, West Central Texas. In West Texas several fields were extended, and Hockley County has prospects of a new pool. In North Texas a deep Strawn sand pool is indicated in Clay County.

LA-ARK-TEX—Three important South Arkansas wildcats were failures, two in Lafayette County and one in Ouachita County. The Shreveport, Magnolia and Village pools added new wells. In southern Louisiana the first crude oil production in the Chalkley area in Cameron Parish was developed by Humble Oil & Refining Co. with a 460-bbl. well.

INDIANA—A second well good for at least 1,000 bbls. a day was brought in in the Cooper field in Gibson County, producing from McClosky lime. An estimated 200-bbl. well is reported from Jasper County in a well 730 feet deep.

KENTUCKY—A new McClosky lime pool is opened near Corydon in western Henderson County. The well flowed 14 bbls. per hour, filling all the limited storage.

ILLINOIS—While bad weather has greatly lessened the number of drilling wells, completions increased in the state and a new peak of production, 155,408 bbls. per day, was reached.

MICHIGAN—A 6,000-bbl. well was completed in the Redding pool in Clare County in a profitable week, during which nine oil wells were completed.

Completions in All Fields

(Week Ending February 25, 1939)

	Oil	Gas	Dry	Total	1939 total comp. to date	1938 total comp. to date
N. Y., Pa., and W. Va.	49	8	4	61	526	864
Ohio	2	3	6	11	149	162
Indiana	2	0	0	2	23	16
Kentucky	5	0	5	10	90	119
Illinois	51	1	13	65	565	93
Michigan	9	1	9	19	166	119
Kansas	14	0	3	17	177	315
Oklahoma	16	2	8	26	260	285
Texas:						
North Central Texas	26	0	9	35	317	388
West Texas	25	0	3	28	293	392
Texas Panhandle	3	2	1	6	61	131
East Texas	12	0	0	12	145	426
East Central Texas	1	0	0	1	36	65
East Texas Border	0	0	0	0	17	23
Gulf Coast Texas	12	0	2	14	199	196
Southwest Texas	4	0	8	12	333	318
Total Texas	83	2	23	108	1,401	1,939
North Louisiana	4	0	3	7	67	98
Gulf Coast Louisiana	3	0	3	6	108	88
Total Louisiana	7	0	6	13	175	186
Arkansas	5	0	3	8	43	33
Montana	0	0	0	0	19	8
Wyoming	2	0	3	5	16	24
Colorado	0	0	0	0	1	1
New Mexico	7	0	0	7	99	96
Utah	0	0	0	0	0	0
California	15	0	2	17	149	238
Nebraska	0	0	1	1	1	0
Total United States	267	17	86	370	3,860	4,498
Total previous week	329	25	111	465		
Week ending Feb. 26, 1938	329	33	93	455		

Outstanding Fields—Highlights

(Week Ending February 25, 1939)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	34	44	4	3,900	934	21,098
Wasson-Bennett	8	32	1	258	219	11,289
Ector County	12	57	5	6,739	1,582	43,847
Winkler County	0	16	1	96	1,765	36,600
Howard-Glasscock	3	24	1	258	1,043	14,698
East Texas	7	22	12	537	25,994	372,547
OKLAHOMA						
St. Louis	4	27	2	429	779	28,500
Sac and Fox	3	11	1	406	89	3,000
KANSAS						
Barton County	5	13	3	927	406	11,892
Stafford County	4	15	3	1,098	249	5,548
Rice County	3	17	0	0	1,272	26,584
Russell County	4	17	3	1,674	1,201	22,257
NEW MEXICO						
Lea County	9	61	7	957	2,035	94,950
LA-ARK-TEX						
Rodessa, La-Ark-Tex	1	6	1	600	1,067	62,500
Cotton Valley, La. (deep)	1	13	0	0	114	10,970
Schuler, Ark.	1	3	0	0	167	18,905
Jennings, La.	1	5	1	311	139	28,038
MICHIGAN						
Freeman-Redding	5	20	2	6,250	63	10,271
ILLINOIS						
Central Illinois	30	360	50	10,068	2,513	146,281
CALIFORNIA						
Wilmington	5	16	2	939	599	83,450
KENTUCKY						
Birk City	3	11	0	0	119	1,218

Illinois and Kentucky

By STAFF CORRESPONDENT

Second Big Well Completed in Gibson County, Indiana

MATTOON, Ill., Feb. 27.—The second good well in the McClosky lime pool opened in December in Gibson County, Indiana, has been completed and is reported to be as large a potential producer as the discovery well drilled in December by Hughes & Amos on the Cooper farm in the C SE NW NE Section 13-3s-14w of second principal meridian. The second well is a south offset drilled by Frank Hollingsworth in the C NE SW NE Section 13-3s-14w, which found McClosky lime at 2,862-86 feet and flowed 592 bbls. in 15 hours through a 23/64-inch choke on 2-inch tubing. Hughes & Amos discovery well got the McClosky lime at 2,836-87 feet and flowed 51 bbls. the first hour. It was later given a test that showed it to be good for 1,000 bbls. a day. It has not been put on steady production because of the lack of shipping facilities.

Sixty-five wells were completed in Illinois in the past week in 16 counties. Fifty-one of the completions were oil wells in 10 counties; one was a gas well, and there were 13 dry holes in nine counties.

Marion County led with 29 completions, all oil wells in the Salem pool, with a total initial production of 4,337 bbls. A goodly proportion of the wells were permitted to produce only three hours on their initial test. Fayette had 16 completions, of which 13 were oil wells with a total initial production of 5,080 bbls. There were three dry holes. Lawrence County's four completions included a 24-bbl. oil well, a big gas well and two dry holes. Jefferson County accounted for one completion, a 200-bbl. well, and Richland had two producing wells with a total of 255 bbls. in initial output. One 50-bbl. well in St. Clair County, a 73-bbl. well in Clay County, a 50-bbl. well in Clinton, and an 18-bbl. well in Coles County, were also recorded while the best Wayne County had to offer was a 5-bbl. completion and one dry hole. One failure each was reported in Washington, Fulton, Madison, Montgomery, and Shelby counties and two in Cumberland County.

Completed Wells

Following were the completions of the week, the initial production representing 24 hours unless otherwise stated:

In Washington County, Smith and others No. 1 Marquard, SE NW SW Section 33-1s-5w, had Benoist sand at 956-73 feet, with a small showing of oil. It was dry and abandoned at 1,026 feet. Taylor Drilling Co. No. 1 Weihe, NE SE NW Section 35-2s-3w, McClosky lime at 1,605-08 feet, total depth 1,625 feet, dry and abandoned.

In Lawrence County, R. E. Longrean No. 1 Fisher & Penault, C SE NE Section 12-4n-1w, Buchanan sand at 1,073 feet, showed salt water. Abandoned at 1,125 feet.

In Wayne County, Thompson Drilling Co. No. 1 Charles Briscoe, C W half SW NW Section 21-2n-7e, Cypress sand at 2,745-60 feet, drill stem test at 3,152-72 feet, open 40 minutes, recovered 2,000 feet of salt water, abandoned at 3,172 feet.

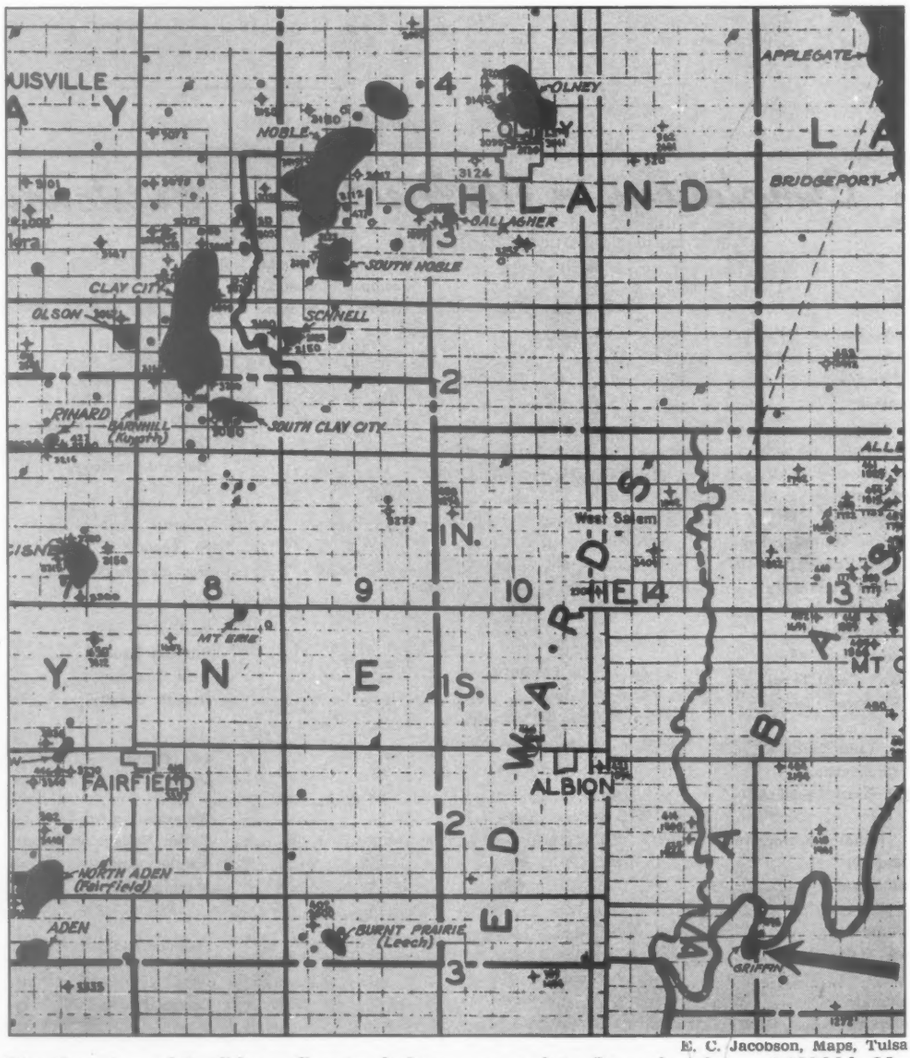
In Jefferson County, Carter Oil Co. No. 1 Norman Capple, SE SE SW Section 4-1s-2e, Bethel sand at 1,920-30 feet, total depth. Shot with 15 quarts, pumped 200 bbls.

In Lawrence County, Connor and others No. 2 Gillespie, SW cor. SE SE NW Section 1-2n-12w of second principal meridian, sand at 521-28 feet, total depth 543 feet, pumped 24 bbls. Keal and others No. 1 Scott Gray B, SE cor. SW Section 7-4n-10w of second principal meridian, Buchanan sand at 1,086 feet, total depth 1,115 feet, 23,000,000 cu. ft. of gas.

Salem Field

In the Salem field in Marion County, Frank Hollingsworth No. 8 Kalkbrenner, SW cor. NE SE SW Section 5-1n-2e, Benoist sand at 1,746 feet, total depth 1,780 feet, flowed 45 bbls. in three hours, rated as a 315-bbl. well. Texas Co. No. 2 W. D. Fyke, SW NE SE Section 8-1n-2e, Benoist at 1,872-85 feet, flowed 21 bbls. in three hours, rated as a 127-bbl. well. Texas No. 2 M. Bryant, SE cor. NE NE SW Section 9-1n-2e, Benoist at 1,877-90 feet, flowed 21 bbls. in three hours, then flowed 147 bbls. in 24 hours. Texas No. 3 M. Bryant, SW NW SW Section 9-1n-2e, Benoist at 1,872-89 feet, pumped 27 bbls. in three hours, rated as a 189-bbl. well. Texas No. 9 City of Centralia land, SW cor. NW NW Section 9-1n-2e, Benoist at 1,819-47 feet, pumped 30 bbls. in three hours, rated a 210-bbl. well. Texas No. 11, City of Centralia land, SW cor. NW NW NW Section 9-1n-2e, McClosky lime at 2,039-48 feet, acidized with 2,000 gallons, flowed 50 bbls. in three hours, rated a 350-bbl. well. Texas Co. No. 1 Heydrick, SW NW SE Section 9-1n-2e, Benoist at 1,901-05 feet, total depth, flowed 18 bbls. in three hours, given a 125-bbl. rating. Texas No. 3 J. Williams, NW cor. SW NE NW Section 9-1n-2e, Benoist at 1,849-84 feet, flowed 30 bbls. in three hours, rated at 210 bbls. per day. Texas No. 6 R. Fyke, NE cor. SW NE NW Section 17-1n-2e, Benoist at 1,850-64 feet, good for 70 bbls. a day. Tide Water Associated Oil Co. No. 4 Miller, SW NE NE Section 18-1n-2e, Bethel sand at 1,881-96 feet, swabbed 37 bbls. in three hours and then pumped 240 bbls. in 24 hours.

A. A. Bowder and others No. 1 Martin, C S half SW SW Section 10-2n-2e, McClosky lime at 2,111½-22 feet, acidized twice with 1,500 gallons at each treatment, pumped 12 bbls. in 24 hours. Kingwood Oil Co. and Bell No. 2 J. A. Shanafelt, SE SE NW Section 16-2n-2e, Benoist at 1,822-45 feet, swabbed and flowed 237 bbls. then flowed by heads 185 bbls. in 24 hours. Texas Co. No. 4 Martin, SE SW SE Section 17-2n-2e, Benoist at 1,803-43 feet, pumped 126 bbls. Texas No. 5 W. Martin, NE SE SE Section 17-2n-2e, flowed 105 bbls. Texas No. 1 H. C. Shanafelt, SE NW NE Section 21-2n-2e, Benoist at 1,857 feet, flowed 210 bbls. Texas No. 3 J.



E. C. Jacobson, Maps, Tulsa

The Cooper pool in Gibson County, Indiana, opened in December by a 1,000-bbl. McClosky-lime well, has another good well offsetting the discovery. Arrow in lower right hand corner indicates the pool

Chapman, NE NW SW Section 28-2n-2e, Benoist 1,766-1,806 feet, flowed 36 bbls. in three hours, rated at 252 bbls. a day. Texas No. 4 J. Chapman, NW NE SW Section 28-2n-2e, Benoist at 1,775-1,820 feet, flowed 35 bbls. in three hours, given a 245-bbl. rating. Texas No. 2 McCollum, NW SE SE Section 29-2n-2e, Benoist at 1,704-57 feet, flowed 28 bbls. in three hours, rated at 189 bbls. a day. Texas No. 4 McCollum, SW SE SE Section 29-2n-2e, Benoist at 1,729-87 feet, flowed 30 bbls. in three hours, a 210-bbl. well. Texas No. 4 Stroup, SW NE NW Section 31-2n-2e, Benoist at 1,734-81 feet, flowed 280 bbls. Texas No. 6 Friesner, SW NE NW Section 32-2n-2e, Benoist at 1,661-1,712 feet, flowed 595 bbls. Texas No. 1 McConnaughay B, SE SE SE Section 32-2n-2e, Benoist at 1,783-1,835 feet, flowed 248 bbls. through 1-inch choke. Texas No. 4 Richardson, NE SW NW Section 32-2n-2e, Benoist at 1,658-1,713 feet, flowed 1,050 bbls. Texas No. 8 Wayman, SW NW NW Section 32-2n-2e, Benoist at 1,653-89 feet, flowed 494 bbls. Texas Co. No. 8 M. T. Williams, SW NW SW Section 32-2n-2e, Benoist at 1,647-1,718 feet, flowed 104 bbls. in three hours, rated a 720-bbl. well. Texas No. 2 Buckley, SE cor. NE NW SE Section 33-2n-2e, Benoist at 1,867-1,908 feet, pumped 314 bbls. Texas No. 4 Buckley, Benoist at 1,852-89 feet, flowed 26 bbls. in three hours, rated at 183 bbls. per day. Texas No. 4 Easley, SE cor. SW NE Section 33-2n-2e, Benoist at 1,873-1,921 feet, flowed 30 bbls. in three hours, a 210-bbl. well. Texas No. 5 Parker, SW NE NE Section 33-2n-2e, Benoist at 1,836-85 feet, pumped 25 bbls. in three hours, a 175-bbl. well. Texas No. 3 S. Schereshoveck, SW SW NW Section 33-2n-2e, Benoist at 1,763-1,822 feet, flowed 40 bbls. in three hours, rated at 280 bbls. a day.

Illinois Fields

HIGHLIGHTS OF THE WEEK: Illinois operators had their attention distracted from their own state to Gibson County, Indiana, where a second 1,000-bbl. well came in in Section 13-3s-14w of the second principal meridian producing from McClosky lime. A heavy snowfall in Central Illinois last week did not make travel any easier in the field. Illinois hit another production peak.

Daily production of new pools, 146,281 bbls.; old fields, 9,127 bbls.; total, 155,408 bbls.

Completed oil wells, 51; operations including locations, rigs and wells drilling, 410.

In Richland County, Pure Oil Co. No. 3 Howard Cazel, NE SW SE Section 23-4n-9e, Weller sand at 2,565-90 feet, pumped 98 bbls. Pure No. 4 Wakefield, NW NE NE Section 26-4n-9e, McClosky lime at 2,913-24 feet, acidized twice with 5,000 gallons each, pumped 157 bbls.

In St. Clair County, C. Wise and others No. 1 Shoudy, SW SW NW Section 34-1n-10w, Trenton pay at 530-48 feet, acidized with 1,000 gallons, pumped 50 bbls.

In Wayne County, Pure Oil Co. No. 4 Billington, C E half SW SE Section 27-1n-7e, Fredonia lime topped at 3,105 feet, showings at intervals from 3,113 to 3,147 feet, acidized with 6,000 gallons, flowed 16 bbls. of oil and 19 bbls. of salt water in 72 hours.

In Clay County Pure Oil Co. No. 1 Gill, C W half NE NE Section 21-2n-8e, Fredonia top at 2,983 feet, showings at 3,005 to 3,033 feet, at intervals, acidized with 5,000 gallons, pumped 73 bbls.

In Clinton County, Adams Oil & Gas Co. No. 10 Copple, SW NW SE Section 35-2n-1w, Bethel sand at 1,342-69 feet, total depth, in sand, shot with 15 quarts, pumped 50 bbls.

In Coles County, R. F. Wheless and others No. 1 Wilfred W. Michaels, SW SW NW Section 1-11n-7e, was completed. It pumps about 18 bbls. of oil and over 20 bbls. of water in 24 hours from pay at 1,883-1,909 feet, which had been shot with 80 quarts. This wildcat had been drilled to 2,173 feet, penetrating St. Louis limestone topped at 2,145 feet (corrected). It was plugged back to 1,919 feet, casing recemented and the plug drilled out to 1,901 feet. A west offset is being drilled by the same operators who are confident that the first well should not be regarded as typical of what the structure can show.

In Cumberland County, Jarvis Brothers No. 1 Wilson Estate, NE NW NW Section 21-10n-7e, was abandoned as a failure at 2,326 feet. McClosky was penetrated at 2,278-88 feet. It had no showings of oil at any depth. Bethel sand lay at 2,130-41 feet.

In Fayette County, Palacine Oil Co. and others No. 1 Mueller, SE SE SE Section 2-4n-1w, was dry and abandoned at 1,460 feet. Aux Vases was topped at 1,445 feet. Mylius & Rosenthal No. 1 Feezel, SE NE SW Section 8-6n-3e, an old 2,001-foot well cleaned out and worked over, had 4½-inch casing set at 923 feet. The crew ripped the pipe at 850-70 feet, the hole filled 500 feet with mud and water, was acidized with 50 gallons, and then filled up 650 feet with salt water, and was abandoned. Glassco & Lewis No. 1 Wagner, NW NW NE Section 30-6n-3e, an old well deepened to 1,784 feet, found only salt water and was abandoned.

In the Louden Pool

Carter Oil Co. No. 9 Hopper, SW SE SW Section 5-7n-3e, Louden pool, Fayette County, Bethel sand at 1,557-73 feet, shot with 20 quarts, pumped 125 bbls. Magnolia Petroleum Co. No. 21 T. C. Clow, NE SW NW Section 5-7n-3e, Bethel at 1,494-1,522 feet, shot with 40 quarts, flowed 1,008 bbls. Carter Oil Co. No. 2 Harley Yolton, NW NE NE Section 7-7n-3e, Bethel sand at 1,495-1,514 feet, shot with 20 quarts, swabbed 276 bbls. through casing. Carter No. 5 H. Durbin, SW SE NE Section 8-7n-3e, Stray sand at 1,500-23 feet, shot with 20 quarts, swabbed 36 bbls. of oil in 18 hours through casing, ripped pipe opposite Weller sand at 1,423-66 feet and well swabbed 120 bbls. from both sands. Carter No. 1 Eckherd, NE NW SE Section 8-7n-3e, Stray sand at 1,504-29 feet, shot with 20 quarts, pumped 100 bbls. Carter No. 1 Elsie Owens, SW NE SW Section 8-7n-3e, Bethel sand at 1,573-81 feet, shot with 28 quarts, swabbed 480 bbls. Carter No. 2 Merry Welker, NW SE NW Section 8-7n-3e, Bethel sand at 1,506-16 feet, shot with 20 quarts, pumped 160 bbls. Carter Oil Co. No. 4 Florence Harding, NW SE NW Section 18-7n-3e, Benoist sand at 1,595-1,604 feet, shot with 20 quarts, swabbed only water, abandoned. Carter No. 5 Phyllis Reese, SE SE SE Section 30-7n-3e, Weller sand at 1,565-75 feet, shot with 20 quarts, pumped 145 bbls. Carter No. 5 M. J. Griffith, NE SE NE Section 31-7n-3e, Weller sand at 1,531-61 feet, shot with 50 quarts, swabbed 600 bbls. H. Rosenthal and others No. 1 Molly Rush, SW cor. SE SW NW Section 31-7n-3e, Weller sand at 1,574-94 feet, pumped 200 bbls. Carter No. 3 Flossie Wellman, NE NE NW Section 14-8n-3e, Bethel sand at 1,509-16 feet, shot with 80 quarts, flowed 822 bbls. with 125,000 cu. ft. of gas. Carter No. 1 Durbin, NE SW SW Section 27-8n-3e, Weller sand at 1,482-1,542 feet, shot with 100 quarts, swabbed 924 bbls. of oil and 200,000 cu. ft. of gas. Magnolia Petroleum Co. No. 7 D. Rhodes, SW NE NW Section 34-8n-3e, Weller sand at 1,522-30 feet, shot with 100 quarts, swabbed 120 bbls.

In Fulton County, Independent Refining & Producing Co. No. 1 Bernherd, NW cor. SW NW NW Section 12-7n-1e of fourth principal meridian, Devonian lime topped at 670 feet, dry and abandoned at 755 feet.

In Madison County, Harry Hazlett No. 1 Wetzel, SW SW SE Section 12-5n-6w, top of the Devonian at 1,856 feet (estimated), saturation at 1,888-95 feet, shot with 60 quarts at 1,890-1,906 feet, hole filled with salt water. Hole trouble was encountered and the test was abandoned. It had been drilled to 1,916 feet and plugged back to 1,906 feet.

In Montgomery County, Mott Drilling Co. No. 1 Ward, NW NW NE Section 23-12n-5w, Trenton lime top at 2,307 feet, dry and abandoned.

In Shelby County, Joe Aylward No. 1 Beckford, NW SW SE Section 7-9n-5e, Benoist sand at 1,948 feet, total depth 1,956 feet, dry and abandoned.

In Fayette County, Martin and others No. 1 Davis, C SW NE Section 7-5n-1w, was dry and abandoned at 1,472 feet..

In Cumberland County, Doran and others No. 1 Haskett, C W half W half W half Section 15-10n-7e, total depth approximately 2,050 feet, dry and abandoned.

New Operations

In Coles County, T. S. Ingram No. 1 Wilson, C NE SW Section 4-13n-14w of second principal meridian. Total depth 525 feet, plugged back to 390 feet and shot with 10 quarts at 350-90 feet, cleaning out.

In Clark County, Phillips & Kost No. 1 Shuey, 1,020 feet from east and 960 feet from south lines of SE quarter Section 31-12n-14w of second principal meridian, shut down at 130 feet.

(Continued on Page 86)

Find Third McClosky Pool in Western Henderson County

OWENSBORO, Ky., Feb. 27. — Another McClosky lime pool has been opened in Henderson County. The Sun Oil Co. and Kentucky Natural Gas Co. No. 1 George Trigg, in the Corydon district in western Henderson County, was drilled to a total depth of 2,605 feet, after having topped McClosky saturation at 2,602 feet. The well flowed over the top of the casing at the rate of 10 bbls. per hour without having been treated with acid. It will be put on the pump and tested before it is given an acid treatment.

This well is several miles from any other oil well, and is regarded as one of the most important discoveries in the state since the Birk City first McClosky lime well came in.

The discovery well on the Blackwell farm in the Birk City field began flowing from McClosky lime when the hole had reached a depth of 1,874 feet. The discovery well in the McClosky in the Spottsville pool, also in Henderson County, was 2,176 feet deep when it began producing. The new discovery is located 2 miles north of Corydon and a half mile from Highway 60.

The Spottsville pool has proved a disappointment to several operators. The latest failure is M. T. Grubbs and others No. 1 Tyra Cooksey, which was acidized with the hole at a total depth of 2,240 feet. The acid treatment developed only salt water and the well will be abandoned.

High water is still holding back development work in western Kentucky A number of wells are ready for completion and will be drilled in as soon as the roads are passable.

Following is the record of completions and new work for the past week:

Butler County, Huntsville district: Porter Evans and Patrick No. 3 V. A. Harrison, 10-bbl. well in Jett sand at 374-86 feet.

Daviess County, Knottsville district: Kentucky-Missouri Oil Co. No. 1 O. E. Gilmore, salt water in Barlow sand, going to the McClosky lime. Birk City district: Jess Ashby and others No. 5 Mrs. C. E. Jagoe, location. Cane Run School district: Rex Pyramid Oil Co. No. 3 Jess Litsey, light show of gas and a smell of oil in the first break of the Mississippi lime; going to the second break. Pleasant Ridge district: General Drilling Co. No. 3 Dode Taylor, dry hole through Bethel sand.

Hancock County, Patesville district: Frost and others No. 2 Patrick Ryan, location.

Henderson County, Spottsville district: M. T. Grubbs and others No. 1 Tyra Cooksey, total depth 2,240 feet, turned into salt water after being acidized; will be plugged. W. R. Jillson and others No. 1 J. T. Hatchett, location. Corydon district: Sun Oil Co. and Kentucky Natural Gas Co. No. 1 George Trigg, 10 bbls. per hour natural flow; total depth 2,605 feet; McClosky saturation at 2,602-05 feet; will pump and acidize later.

Hopkins County, 9½ miles southwest of Madisonville: W. P. Clements and others No. 1 Pearl Neicz, dry in McClosky at 1,665 feet; going to the Corniferous lime.

McLean County, South Livermore district: Walter Daly and others No. 6 D. and S. Butterfield, dry hole through Jett sand, total depth 1,175 feet.

Muhlenberg County, Belton district: Fred Phillips No. 1 S. P. Browning, moving in.

Ohio County, Oklahoma district: Charles Coffey and Dewey Huff No. 1 P. Demmers, 10-bbl. well in Jett sand at 508-19 feet. Whitesville district: R. H. Allison and others No. 1 T. H. Wilson, drilling at 100 feet.

Oklahoma Operations

By
DAL DALRYMPLE

Wildcat Near Newalla Runs High on Tonkawa Formation

The wildcat being drilled by R. Olsen Oil Co. and others at No. 1 White, C NE NE Section 30-11-1e, in the Newalla area of southeastern Oklahoma County, claimed attention of Oklahoma operators the past week when it was reported checking high structurally. A revival of royalty trading in the district was reported.

The No. 1 White found the Tonkawa series at about 4,000 feet, checking some 15 feet higher structurally than in the Springrose Drilling Co. No. 1 Edwards, C SE SE Section 19-11-1e, drilled several years ago and abandoned when hole was junked because of lost tools and other mishaps. The current test was drilling ahead below 4,000 feet, expecting base of the Tonkawa at around 4,215 feet. Geologists believed the Layton series would be found at around 4,250 feet. The formations are reported checking normal without breaks, as were found in the previous test.

The Davis-Wynnewood district in Murray and Garvin counties shared in the spotlight, with work underway or due to start at three wildcats. Kerlyn Oil Co. has the contract to deepen the old First National Oil Co. No. 1 Butterly, NE NE SE Section 22-1n-1e, in southeastern Garvin County and northwest of Davis in Murray County. It has been shut down at 3,705 feet for several months and rotary tools were being moved in to deepen to around 5,000 feet. Saunders, Benson and others No. 1 Vanderslice, C SW SW Section 25-2n-2e, in Murray County and northeast of Davis, had spudded to 102 feet, set surface casing at 100 feet, and was moving in rotary tools. Amon G. Carter No. 1 Vinsonite, C NE SE Section 34-1s-2e, in Murray County and southeast of Davis, was preparing to resume drilling below 1,300 feet after repairing derrick.

Two new producers were near completion in the Sac and Fox field, Lincoln County. Cooper Drilling Co. No. 7 State, SW NE NE Section 16-14-6, was bottomed at 3,147 feet in Prue sand and flowed 367 bbls. of oil in 18 hours after a shot. Same company's No. 3 State, SW SE NE Section 16-14-6, was flowing but no gauge had been reported. The crew was cleaning out at 15 feet off bottom, total depth 3,087 feet, when oil and gas was ignited by a broken electric bulb, the fire being extinguished in about three hours.

Leases on approximately 3,000 acres of Indian land in Caddo and Kiowa counties were sold for about $22,000 at the Kiowa Indian Agency lease sale in Anadarko, February 24. Tide Water Associated Oil Co. paid $27.01 an acre for a 160-acre tract in SE quarter Section 23-7-14w, in northeastern Kiowa County and about 3 miles southwest of Carnegie in Caddo County. Other leases, scattered in the two counties, were obtained by Magnolia Petroleum Co., Phillips Petroleum Co., Carl J. O'Hornett, Cities Service Oil Co., Gulf Oil Corp. and Indian Territory Illuminating Oil Co.

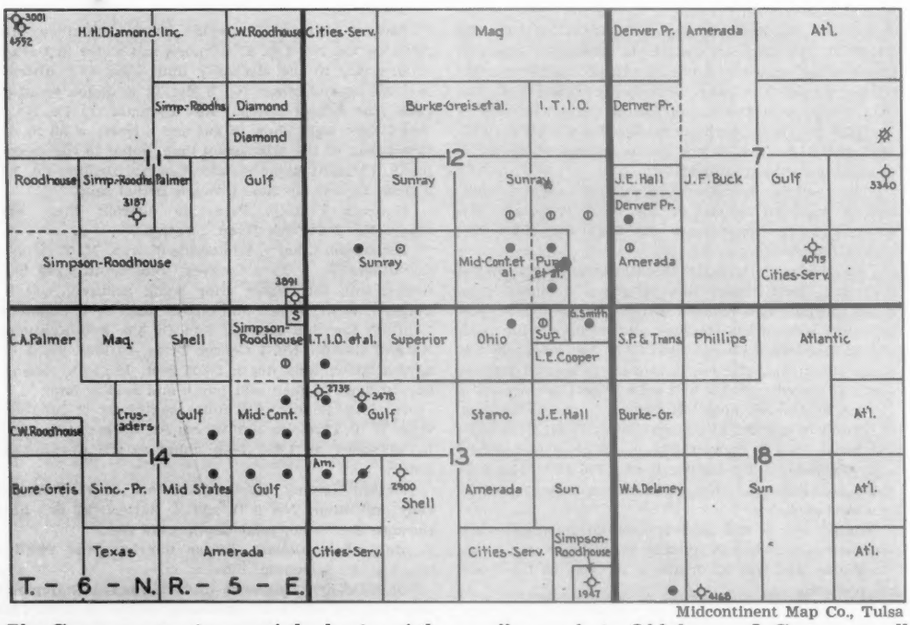
The next Osage Indian lease sale will be held at the Osage agency in Pawhuska March 21. Leases on 79 tracts covering 12,640 acres will be offered.

Payne County

The twenty-first producer in the Ramsey pool, Payne County, was completed at Mid-Continent Petroleum Corp. and others No. 8 Ramsey, NE NW NW Section 18-18-2e. It was washed in through tubing, flowing 452, 394, and 420 bbls. of oil in the first three hours, respectively, earning estimated potential rating of 10,135 bbls. Gas averaged 5,850,000 cu. ft. Production was from Wilcox sand at 4,767-93 feet, total depth. It extends production one location northward.

Previously, Stanolind Oil & Gas Co. and others No. 1 Walters, SW SW NE Section 18-18-2e, was completed for an estimated potential of 3,240 bbls. of oil daily. It topped Wilcox sand at 4,809 feet, total depth 4,823 feet and flowed 270 bbls. of oil in the first two hours, and later flowed 231 bbls. of oil in eight hours through 1-inch choke before being shut in for connections. It extended production one location east of the community block on which all other Ramsey producers are located.

Operations in the area, including locations and drilling wells, are: Stanolind Oil & Gas Co. and others No. 2 Walters, NW SW NE Section 18-18-2e; Mid-Continent Petroleum Corp. and others No. 1 Nottingham, NW NW SE Section 18; same operators' No. 1 Simpson, SE SW SW Section 7, north offset to No. 8 Ramsey and outside the community block; same operators' No. 9 Ramsey, SE SE NW Section 18, and operators' No. 6 Columbia, NE NE SW Section 18-18-2e.



Midcontinent Map Co., Tulsa

The Grayson area is one of the busier of the smaller pools in Oklahoma. A Grayson well was completed the past week at Sunray Oil Co. No. 1 well, NE SW SW Section 12-6n-5e

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending February 25, and for the preceding week, was as follows:

	Barrels	
	Feb. 25	Feb. 18
Allen	5,675	6,025
Billings	5,150	5,200
Burbank	7,675	7,400
South Burbank	9,250	9,375
Balance Osage	18,600	18,500
Blackwell district	3,950	3,850
Bristow-Slick	6,875	6,925
Chandler	1,825	1,750
Crescent	3,525	3,425
Cromwell	3,000	3,025
Cushing-Shamrock	10,350	10,225
Duncan district	4,125	4,275
Edmond	4,725	4,975
Fish	2,550	2,650
Fitts	30,575	31,250
Jesse	2,300	2,775
Graham-Fox	4,375	4,325
Gray	775	825
Healdton	8,925	9,050
Hewitt	3,675	3,575
Keokuk	3,775	3,825
Konawa	1,100	1,250
Lucien	8,050	7,875
Moore	3,550	4,225
Oklahoma City	114,050	111,425
Olympic	3,525	3,200
Ramsey	4,350	2,750
Sasakwa	1,300	1,275
Sholem-Alechem	2,300	2,400
Seminole district:		
Bowlegs	7,875	7,750
Carr City	3,025	2,925
Dora	4,525	4,725
Earlsboro	4,550	4,600
South Earlsboro	550	550
East Earlsboro	4,350	3,875
Little River	6,825	6,650
East Little River	725	700
Maud	1,075	875
Mission	1,425	1,400
Seminole	7,675	7,450
East Seminole	1,450	1,525
Searight	2,325	2,300
Total Seminole	46,375	45,325
St. Louis-Pearson	28,500	26,500
Tatums	1,625	1,800
Tonkawa-Garber-Thomas	4,125	4,150
Wewoka	2,075	2,150
Yale-Jennings	3,725	3,675
Other pools	83,500	83,250
Total Oklahoma	449,825	444,475

Wildcat Reports

H. H. Heydrick No. 1 Paschall, NE SE NW Section 22-13-19, wildcat near Keefeton in Muskogee County, was dry and abandoned at 1,468 feet, total depth. Clark & Co. No. 1 Weatherly, NW SE NW Section 24-1n-7, wildcat south of Jesse in Pontotoc County, was shut down and temporarily abandoned at 484 feet.

L. Walker No. 1 King, SW SE NW Section 5-4-7, wildcat in the East Ada district, Pontotoc County, was drilling around 400 feet. Atlantic Refining Co. and others No. 1 Jimmey, SE NW NE Section 21-7-6, wildcat west of Little River pool in Seminole County, was a location. Burke-Greis Oil Co. No. 1 Harjoche, NE NE SW Section 19-8-7, wildcat southeast of the Bowlegs area in Seminole County, was building rig. Petroleum Grubstakers Co. No. 1 Scott, SE SW SW Section 14-13-19, and the company's No. 1 well, CSL NE NW Section 21-13-19, wildcats in the Keefeton area, Muskogee County, were machines. Same company's No. 1 Cookson, SW NW NW Section 33-15-22, wildcat north of Cookson in Cherokee County, was drilling below 230 feet.

Pottawatomie County

Howard Berkey No. 2 Billington, SE SW SW Section 31-7-5, St. Louis field, Pottawatomie County, found dolomite at 4,120 feet, total depth 4,220 feet, was acidized with 5,000 gallons and had initial yield of 409 bbls. of oil in 24 hours.

Alma Oil Co. No. 1-A Smith, C S half SE NE Sec-

ONCE AGAIN RUST MISSES A BANQUET

DUTCH BOY RED-LEAD

TAKE a hard-boiled look at the record of Dutch Boy Red-Lead. You find it used—and re-used—by practically every great American industry. You find it constantly on duty protecting millions of square feet of metal surfaces—doing a first-rate job in spite of the most adverse conditions. *So no one can be called an experimenter—or a chance taker—when he specifies Dutch Boy Red-Lead.*

First and foremost, this paint has "stick-to-itiveness." It takes hold and holds fast. At the same time, it is highly elastic—expansion or contraction of the metal surface does not loosen its grip. It not only keeps out moisture but also resists the destructive action of other common causes of corrosion—such as gases, smoke and salt water.

Dutch Boy Red-Lead comes in both paste and liquid form, the latter including a quick-drying type for use when allowable drying time is short. The pigment in every case is pure red-lead that contains more than 97% Pb_3O_4, thus assuring easier application, higher spreading rate and a uniform film of greater density.

For long service, and complete dependability, specify Dutch Boy Red-Lead.

NATIONAL LEAD COMPANY

111 Broadway, New York; 116 Oak St., Buffalo; 900 West 18th St., Chicago; 659 Freeman Ave., Cincinnati; 1213 West Third St., Cleveland; 722 Chestnut St., St. Louis; 2240 24th St., San Francisco; National-Boston Lead Co., 800 Albany St., Boston; National Lead & Oil Co. of Penna., 316 Fourth Ave., Pittsburgh; John T. Lewis & Bros. Co., Widener Building, Philadelphia.

[LITHARGE of correct physical character and extreme chemical purity is a necessity in oil refining. Such litharge is made by us. You can always rely on its unvarying uniformity. Our nearest warehouse can give you quick shipment.]

tion 32-7-5, found Calvin sand at 3,094 feet, was bottomed at 3,136 feet, and pumped 20 bbls. of oil in 24 hours.

R. W. Brown and others No. 2 Haer, SW NW SE Section 31-10-5, and Associated Petroleum Co. No. 1 Riddle, SW SE NW Section 14-7-4, were abandoned locations.

Westheimer & Neustadt No. 2 Bruno, NE SE SE Section 31-7-5, an old well, was deepened from 4,147 feet to 4,175 feet, acidized and pumped 312 bbls. of oil and 40 bbls. of water in 24 hours. Gravity of the oil was 39 degrees. It had dolomite at 4,150-75 feet.

Sinclair Prairie Oil Co. No. 3 M-Qua-Ka, SE SW SW Section 11-7-4, an old well bottomed at 4,190 feet, had casing perforated at 3,650-93 feet in Hunton lime, was acidized and pumped 150 bbls. of oil daily.

F. W. Cooper No. 3 Bewley, NW SE NW Section 36-7-4, St. Louis area, was a location. Denver Producing & Refining Co. No. 1 Porter, SE NW NE Section 2-6-4, was a location.

Helmerich & Payne, Inc., No. 1-A Roberts, C NE SE Section 3-8-4, Grisso area, topped Hunton lime at 4,050 feet, total depth 4,135 feet, deepened from old total depth of 4,067 feet, was acidized and pumped 216 bbls. of oil in 24 hours, recompleted.

Pontotoc County

J. P. Getty No. 10 Masters, NE NW NW Section 23-2n-7, Fitts district, Pontotoc County, was bottomed at 1,393 feet, was shot with 30 quarts and pumped 36 bbls. of oil in 24 hours.

Senora Oil & Gas Co. No. 1 Hickman, SW SE SE Section 25-5-4, Bebee district, found Viola lime at 2,432 feet, total depth 2,459 feet, and had initial yield of 240 bbls. of oil daily.

Oil Royalties No. 1 Norman, SE SE SE Section 7-5-5, topped Viola lime at 2,465 feet, total depth 2,585 feet, plugged back to 2,511 feet, and initialed 30 bbls. of oil daily.

Jones & Shelbourne No. 1-A Scrivner, SE SE SW Section 15-2n-7, was bottomed at 1,460 feet, plugged back to 1,440 feet, and was dry and abandoned.

H. Z. Moore No. 1 Payne, SE NW SE Section 16-4-4, wildcat in western Pontotoc County and east of Stratford, was abandoned at 971 feet.

Patsy Oil Co. No. 1 Bates, NW NE SW Section 26-2n-7, was a cellar.

Seminole County

Sunray Oil Co. No. 1 Fleet & Osborn, NE SW SW Section 12-6-5, north side of the Grayson pool, Seminole County, entered Earlsboro sand at 2,845 feet, drilled to 3,921 feet, plugged back, was shot and had daily initial production of 179 bbls. of oil. Pay was topped at 2,942 feet.

Rogers & Rogers No. 2 Robinson, NW SE SE Section 36-8-7, was an abandoned location.

New work in Seminole County: Vierson Oil & Gas Co. No. 7 Factor, SW NW SW Section 25-5-7, Allen area, location; J. F. Smith No. 1-A Brown, SE SE NW Section 28-7-6, Dora pool, location; Gillespie & Moore No. 1 Taylor, NW NW SW Section 18-8-7, Bowlegs district, drilling ahead; McQueen & Johnson No. 1 Ward, SW SW NW Section 3-6-6, building derrick; Hall-Troup & Moore, SW NW SW Section 3-6-6, cellar and pits; Simpson-Roodhouse Co. No. 1-A Gassaway, SE NE NE Section 14-6-5, Grayson area, drilling.

Lincoln-Oklahoma Counties

Cooper Drilling Co. No. 5 School land, SE NE NE Section 16-14-6, Sac and Fox pool, Lincoln County, found Prue sand at 2,992 feet, total depth 3,090 feet, was shot with 310 quarts and produced 406 bbls. of oil in 24 hours.

Imperial Oil & Gas Co. No. 1 Bell, SW NW NW Section 15-12-3w, Oklahoma City field, Oklahoma County, was shut down and temporarily abandoned at 1,002 feet, total depth.

Okmulgee County

J. L. Selby No. 10 Sutton, NW SW SE Section 33-14-14, Okmulgee County, was completed as a 2-bbl. pumper at 1,212 feet, total depth.

B. H. Young No. 5 Miller, CSL NW SE Section 5-15-14, was bottomed at 820 feet and pumped 10 bbls. of oil daily. Both wells were shot.

Creek-Okfuskee-Tulsa

L. B. Jackson No. 11 Wills, SE NW NW Section 26-18-8, Creek County, topped Red Fork sand at 2,642 feet, total depth 2,642 feet, was shot and pumped 15 bbls. of oil in 24 hours.

Kessler Oil & Gas Co. No. 1 Cartright, NW NE NE Section 29-18-9, had initial yield of 105 bbls. of oil daily from Dutcher sand topped at 2,879 feet, total depth 2,891 feet.

Big Four Petroleum Co. No. 2 Copeland, SW SE NW Section 24-19-7, had Bartlesville sand at 2,730 feet, total depth 2,785 feet, and pumped 8 bbls. of oil daily.

Same company's No. 2 Vance, NE NE SW Section 24-19-7, topped Red Fork sand at 2,610 feet, total depth 2,763 feet, plugged back to 2,670 feet, and was completed for 12 bbls. of oil daily.

Bert Swift No. 1 Lamp, SW SE SW Section 10-18-8, was abandoned at 2,900 feet, total depth. H. C. Fogle No. 1 Replogle, NW NE NE Section 36-19-7, was abandoned at 2,661 feet, total depth. Comail Oil Co. No. 1 Curren, SE cor. Section 21-19-6, was abandoned at 3,606 feet, total depth.

W. B. Pine No. 1 Canard, NW SE SW Section 12-10-11, was location for a new test in the Weleetka area, Okfuskee County.

Two new tests were started in the Sand Springs area, Tulsa County, at A. D. Whitten No. 2 Henderson, SE NE SE Section 24-19-11, drilling below 800 feet, and same operator's No. 2 Fulsome, NW SE NE Section 24-19-11, spudded.

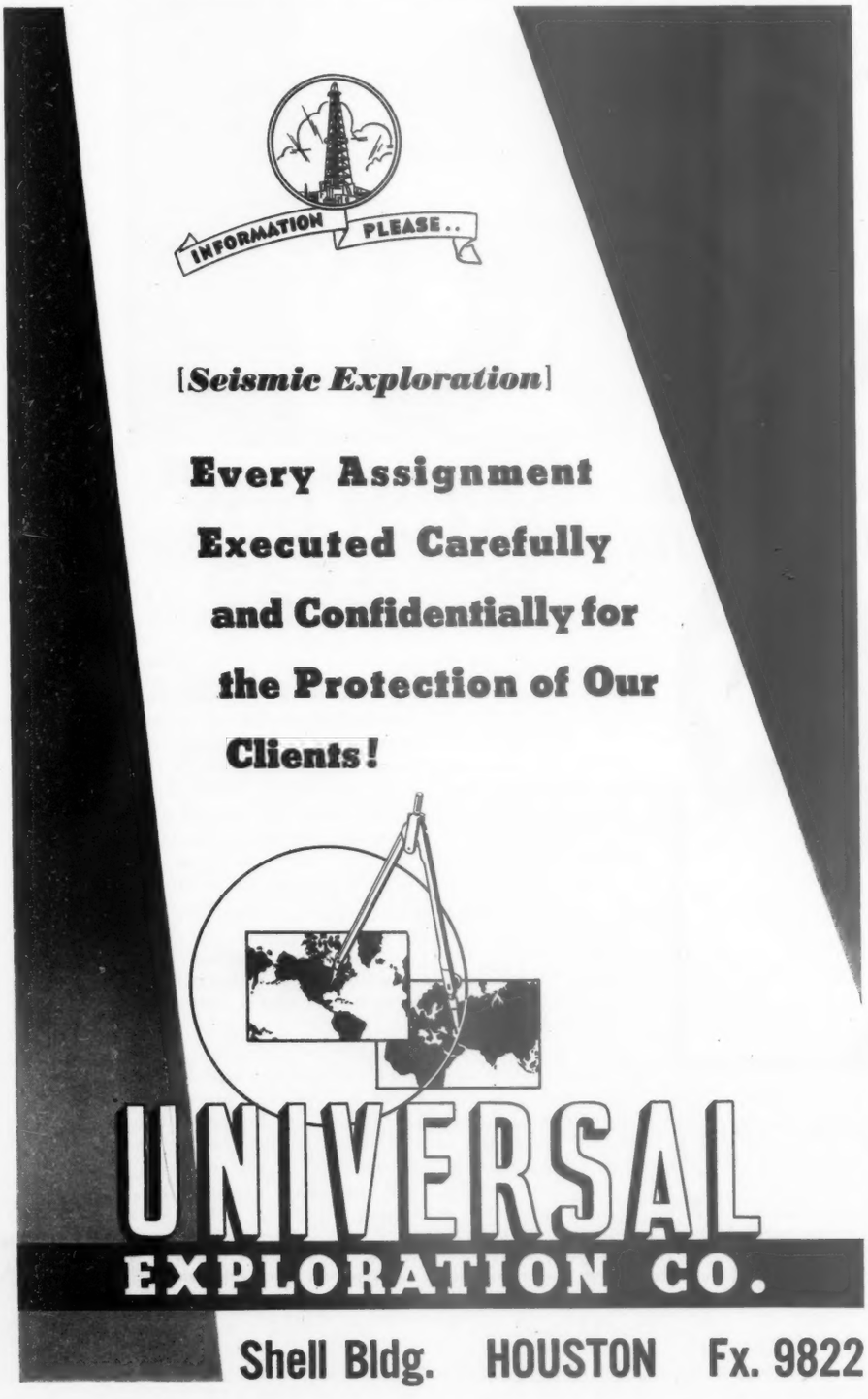
Southwestern Oklahoma

Magnolia Petroleum Co. No. 2 Henley, NE NE SE Section 35-6-10w, Cement field, Caddo County, found sand at 4,700-60 feet, total depth, and produced 11,650,000 cu. ft. of gas daily, with 1,470 pounds rock pressure.

Cities Service Oil Co. No. 25 Surber, SE SE SW Section 33-1s-8w, an old well in the Empire pool, Stephens County, was deepened from 2,258 feet to 2,268 feet, produced 200 bbls of oil in 24 hours and was recompleted.

George L. Pace No. 2-A Gilworth, SW SE NW Section 2-2s-8w, Stephens County, was abandoned at 2,538 feet, total depth, when water intruded.

(Continued on Page 88)



Southwest Texas District

By
F. L. SINGLETON

City of Aransas Pass Is Due For a Townsite Development

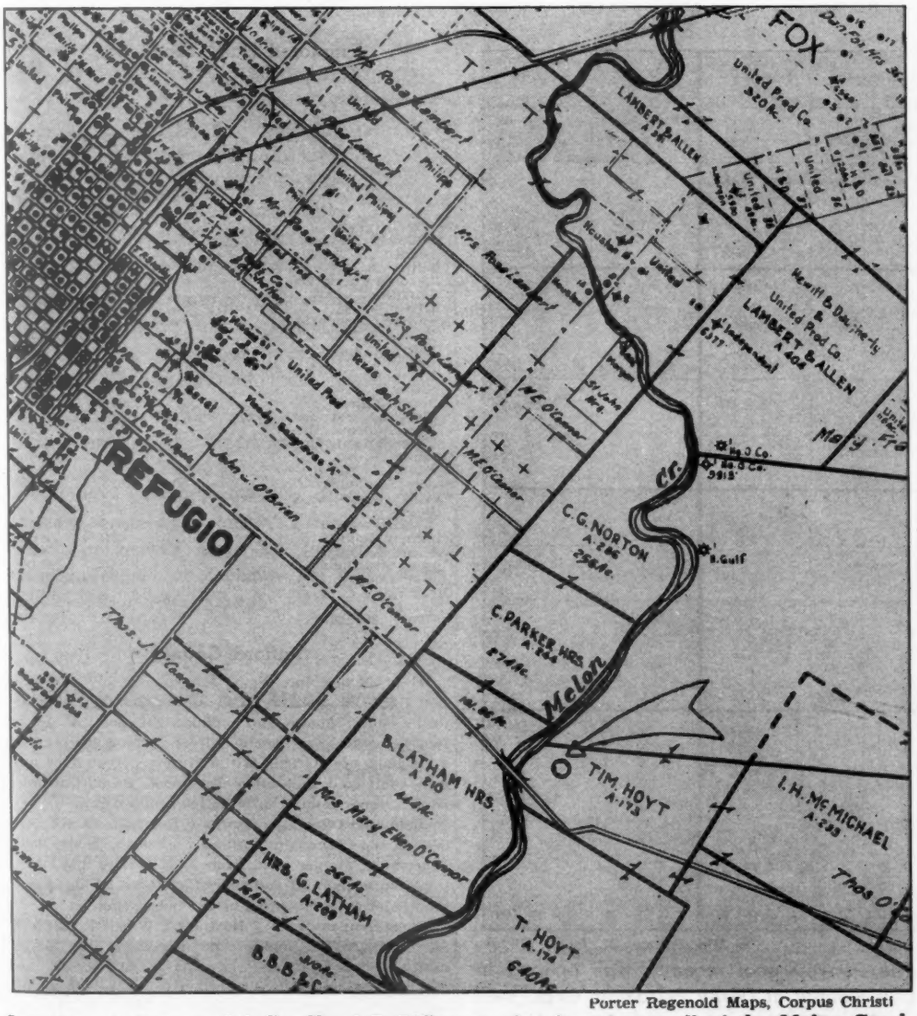
CORPUS CHRISTI, Tex., Feb. 27.—Drilling within the Aransas Pass townsite, Aransas County, was practically assured following the completion of R. B. Bryant No. 1 Morgan-Meginnis which extended production of the McCampbell field within 1,000 feet of the city limits. While a potential gauge of the well had not been made, it is reported to have flowed an estimated 525 bbls. daily through a three-sixteenths inch choke with tubing pressure 600 pounds and casing pressure 750 pounds.

Oil sand in the 7,100-foot horizon was logged at 7,121-41 feet, the total depth, and the well was completed through perforated casing at 7,129-38 feet. The well is in the center of combined Lots 3 and 7, Section 204, Burton and Danforth subdivision, about 3,000 feet southeast of Corgey & Grote No. 1 Carlock, the nearest producer. The Carlock producer was completed in October of last year at 7,127-33 feet, and extended the field 1½ miles south which resulted in a revival of drilling activity. The townsite of Aransas Pass has been divided into approximately 200 drilling blocks, and it is reported that about 27 drilling permits have been issued.

Interest in this area is now centered on Richardson Petroleum Co. No. 1 O. A. Sherwood, 1½ miles south of production, and about 2 miles northeast of Ingleside in the Rosa Teal Survey. The hole is bottomed at 8,310 feet and 7-inch casing was cemented at that point. A slight showing was reported in the 6,800-foot horizon, salt water in the 7,100-foot zone, and an electrical survey is reported to have shown another sand at 8,200 feet. Little information has been released by the company, and it is not known if the well will be tested at its present depth or drilled deeper.

Fourth Oil Pay in La Rosa

The La Rosa field, Refugio County, received its fourth producing horizon with the completion of Rutherford Oil Corp. No. 1-B Schirmer which flowed 155 bbls. of 24.3-gravity oil on a 24-hour potential test through an eighth-inch choke. Tubing pressure was 950 pounds and casing pressure 625 pounds. The well is an east offset to the company's No. 1 Pawieleck, completed several weeks ago in a new sand at 6,300 feet, which extended the field about 3,400 feet northeast. The Schirmer well showed salt water in the 6,300-foot horizon, and was drilled to a total depth of 6,425 feet.



Porter Regenold Maps, Corpus Christi

Location of Copano Oil Co. No. 1-C O'Connor, the discovery well of the Melon Creek field, Refugio County

Five and one-half inch casing was cemented at 6,377 feet, and the well was completed through perforated casing at 6,108-12 feet. Other producing sands in the field are found at 5,400, 5,900 and 6,300 feet.

Development of the Riverside field, Nueces County, continues to be disappointing as H. D. & H., Inc. No. 1 Wright, a south offset to the discovery oil well, tested salt water in the discovery horizon, and is drilling ahead in the hope of picking up a deeper pay. The sand section in the discovery horizon in this well was drill-stem tested at 5,018-29 feet, and showed 1,000 feet of salt water. Approximately 1½ miles south, Republic Natural Gas Co. No. 1 Seaboard Oil Co. has been abandoned at 5,525 feet, after several drill-stem tests showed water. South of this test about a mile, Heep Oil Corp. No. 1 Smith is drilling below 5,100 feet. This well also showed salt water on several drill-stem tests, and the hole is expected to be abandoned this week. The showing of these tests indicates that the discovery well may be on the south edge of the structure, and for this reason, the drilling of Shell Petroleum Corp. No. 1 Griffin, 650 feet northeast of the discovery well, will be watched with much interest.

Gravis & Doran No. 1 Frances Clark which opened distillate production 2½ miles southeast of the East Alice field, Jim Wells County, has been killed and a new horizon at 4,825-35 feet is being tested. The well was originally completed at 5,138-42 feet, and on an initial gauge flowed 5 bbls. of distillate per day through a 9/64-inch choke.

In the same county and located 10 miles north of Alice in the Ross M. Bridges Survey, H. H. Howell and others reperforated casing at 6,644-48 feet in No. 1 W. T. Wright and the well showed a slight amount of gas with a trace of oil. At the close of the week, preparations were being made to reperforate the entire section which includes approximately 70 feet of sand. Wildcatting in the county has extended within the Alice townsite as applications for permits were filed with the Railroad Commission by the Premont Petroleum Co. and Roy Murray. Premont Petroleum Co. staked locations for No. 1 Rouse & Reynolds in Block 144 of the Farm Block subdivision; No. 1 Lewis H. Jones No. 1 Lemmond in Block 143, while Roy Murray made location for No. 1 Julius Buegeler in Block 140, Farm Tract subdivision.

In the Yturria area, Willacy County, H. C. Cockburn and others are moving in material for No. 1 Yturria Land & Livestock Cattle Co., an east offset to Shell Petroleum Corp. No. 1 Yturria Land & Livestock Cattle Co. completed a few years ago as a distillate producer. The well is being drilled on a farmout lease from Shell Petroleum Corp.

In the Balcones Fault Line district, two small pools were opened in Guadalupe County. Frank H. Glenn No. 1 Mannie Appling, Harriet Cottle Survey, perforated open formation at 1,960-2,182 feet, and was completed on the pump for an initial production of 18 bbls. of oil and a small amount of water. The well was drilled to the Edwards lime at a total depth of 2,377 feet, and was completed in the Dobie lime after plugging back to 2,182 feet.

Two miles northeast of Kingsbury and located in the John King Survey, Joseph Holefield No. 1 Claud Broadnex pumped 21½ bbls. of oil the first 39 hours. The well had been standing for several days. This well was drilled to the Edwards lime, but was completed in the Dobie lime section at the plugged-back depth of 2,161 feet.

In the Laredo district, Thompson & Lowe were preparing to drill plug on No. 1 Ramirez, which is expected to open the first oil production for the Lopena gas field, Zapata County. The well is southwest of production and is testing sand at 2,338-43 feet. Location is in Block 6, Porcion 18.

(Continued on Page 88)

Kansas Developments

By
DAL DALRYMPLE

Wildcats in Missouri-Kansas Enliven Forest City Activity

Interest in the Forest City basin has been confined to leasing and geological work heretofore, but from now on wildcat drilling will hold attention until the productive possibilities of the four-state district are ascertained. Work already has started at two wildcats in the Kansas part of the basin and locations have been announced for at least four wildcats in the Missouri sector. Two tests also are listed in southeastern Nebraska, but as yet no locations have been announced in Iowa. However, thousands of acres of land have been leased in some 25 counties in southern and southwestern Iowa and announcement of the first test in that state is expected soon.

Work was reported to have started the past week at W. E. Mills and others No. 1 Fred Spring, SW SE Section 30-62-38w, just north of the limits of the Mound City townsite in Holt County, northwestern Missouri. Location is on a block of leases held by J. H. Everett and associates. Mr. Mills was given the contract to drill the well to St. Peter sand, unless oil is found in paying quantities above that level. It is thought the St. Peter will be found at around 2,800-3,000 feet. Rotary material has been moved in and preparation of the ground for erection of the derrick was started. It is the plan of the operator to core most of the way in order to obtain accurate geological information and not to overlook possible pay zones. A 13-inch hole will be drilled to 200 or 250 feet, according to announcement of the operator, and a 7¾-inch hole will be carried on down.

W. D. Turner, Houston, Tex., operator, was reported to have moved in rotary equipment on a block of wildcat leases about 8 miles northeast of St. Joseph, in Andrews County, Missouri. Exact location had not been announced, but work was expected to start soon.

C. E. Richardson and associates had staked location for No. 1 Jones, C NW NW Section 16-58-17, in western Macon County and northeast of Bucklin in Linn County. Rotary tools were due to be moved in this week and work was to start as soon as weather is favorable and roads passable. Macon County is on the far east side of the basin.

The other Missouri test, which was the first location to be announced, is the H. V. Elwell No. 1 Taylor, CEL NW Section 12-62-21w, 5 miles west of Milan in Sullivan County. Derrick was erected last fall, but drilling was delayed until more favorable weather and to complete lease blocks. The North Missouri Oil Development Co. recently bought an interest in part of the holdings. Mr. Elwell also was expected to announce location for a wildcat in Harrison County.

In the Kansas sector of the basin, W. M. McKnab No. 1 Fritz, SW SE NW Section 4-12-14e, Shawnee County, was drilling below 1,600 feet. John Hardaway and others No. 1 Scheller, SW SE SW Section 30-10-22e, Leavenworth County, was shut down at 345 feet.

Extensions of proven areas featured the week's activity in western Kansas areas. I. W. Murfin and others No. 1 Birzer, NE NE SW Section 21-19-11w, was bottomed at 3,154 feet in Lansing lime and 1,200 feet of 42-gravity oil rose in the hole. It extends the Lanterman pool in Barton County 1¼ miles southwestward. Operators were preparing for production test.

I. W. Murfin and others No. 1 Habiger, SW cor. Section 6-18-9w, extended the Bredfeldt pool in Rice County five-eighths of a mile northwestward. It had gas estimated at 2,000,000 cu. ft. daily at 3,140 feet, total depth, in Lansing lime. Oil was showing with the gas. Operators were expected to drill deeper before completing.

Continental Oil Co. No. 1 Drumm, SE SE NE Section 16-9s-21w, west extensioner of the Morel pool in Graham County, made 24-hour potential of 1,043 bbls. of oil from Arbuckle lime at 3,702 feet, total depth.

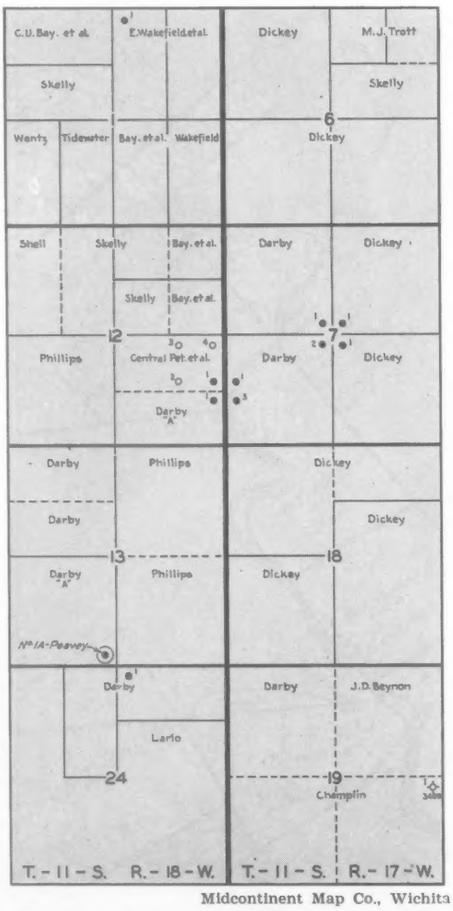
Barton County

Spencer & Yarnell completed a large producer in the Barton County sector of the Bloomer field at No. 5-A Patzner, SW SW SE Section 36-17-11w. Arbuckle lime was penetrated at 3,249-54 feet, total depth, and was acidized with 1,000 gallons. It pumped 620 bbls. of oil in eight hours and made daily potential of 1,863 bbls.

Shell Petroleum Corp. No. 6-C Hoffman, SW SE SE Section 1-16-14w, Trapp field, found Arbuckle lime at 3,335-46 feet, total depth, was acidized, and swabbed 157 bbls. of oil in 10 hours, cutting 12 per cent water. It was completed for daily pumping production of 15 bbls. of oil.

Champlin Refining Co. No. 1 Grant, NW SW NW Section 20-20-11w, outpost half way between the Hagen and Clawson pools, topped Lansing lime at 3,075 feet, Arbuckle lime at 3,367 feet, total depth 3,409 feet, acidization was without result and it was dry and abandoned. It is about three-quarters of a mile north of the Hagen pool and an equal distance south of the Clawson pool.

Gardner and National Refining Co. No. 1 Drake, NE NE NE Section 4-17-13w, Ainsworth area, was a location. Stanolind Oil & Gas Co. No. 5 Dick, C S half SW Section 2-20-11w, company's No. 9 Schartz, C S half NW Section 2-20-11w; company's No. 10 Schartz, C N half SW Section 2-20-11w, and the company's No. 18 Panning, C N half NW Section 11-20-11w, all in the Silica field, were cellars. Stanolind Oil & Gas Co. No. 3 Jutting, SE NW NE Section 15-20-11w, Ellinwood area, was a rotary rig.



Midcontinent Map Co., Wichita

The Peavey pool recently was opened in Ellis County at Darby Petroleum Corp. well in SE SE SW Section 13-11-18w, about 2 miles southwest of the South Burnett pool

Wildcat Operations

Skelly Oil Co. No. 1 Gage, SE SE SW Section 35-16-13w, Topeka lime discovery well on the east side of the Ainsworth pool, Barton County, was completed for potential of 451 bbls. of oil daily. It topped Topeka lime at 2,705 feet, Lansing lime 3,074 feet, had quartzite at 3,291 feet, and was bottomed in quartzite at 3,382 feet, where it was dry. Operators plugged back, perforated casing at 2,903-29 feet in Topeka lime, acidized with 7,000 gallons and pumped 150 bbls. of oil in eight hours. Other Ainsworth production is from Arbuckle lime.

Sinclair Prairie Oil Co. and others No. 1 Martens, C W half W half SW Section 20-21-3w, wildcat one mile west of the Voshell pool in southern McPherson County, was building rotary rig.

Estimated Daily Production

Estimated daily production for Kansas for the week ending February 25, and the preceding week was as follows:

	Barrels	
	Feb. 25	Feb. 18
Oxford City	975	950
Burrton	8,700	8,725
Ritz-Canton	4,075	4,100
Graber	3,550	3,125
Hollow-Nikkel	1,750	1,725
Lerado	600	750
Voshell	1,925	1,950
Wellington	2,025	2,075
Ellsworth County:		
Lorraine	1,725	1,850
Other pools	1,400	1,735
Rice-Barton counties:		
Bloomer	1,875	1,900
Chase	3,600	4,700
Geneseo	3,375	3,900
Raymond	775	875
Silica	8,200	9,725
South Silica	1,975	1,800
Keesling	1,075	500
Miscellaneous Rice	9,560	9,155
Miscellaneous Barton	8,040	7,405
Wherry	2,875	3,650
Russell County	22,250	22,375
Sedgwick County	3,525	3,625
Ellis:		
Bemis	4,850	4,750
Miscellaneous	2,940	3,135
Kingman County	620	620
Stafford County	5,550	5,235
Greenwood County	9,250	9,200
Butler County	19,125	19,450
Other fields	14,515	13,440
Total Kansas	150.700	152,425

Stafford County

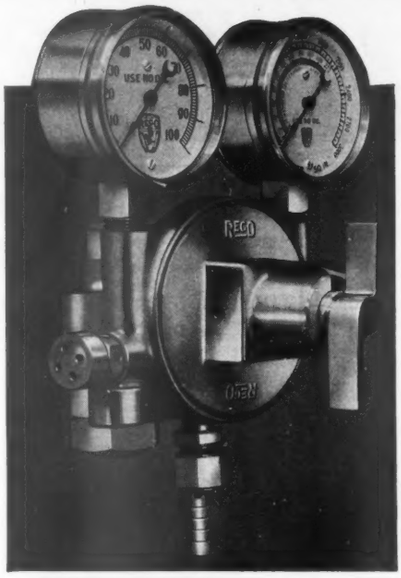
E. H. Moore, Inc., No. 2 Johnson, SE NW NE Section 13-24-11w, northwest side of the Zenith pool, Stafford County, flowed and pumped 246 bbls. of oil in four hours and was completed for 24-hour potential of 4,728 bbls. of oil. This is the largest potential of any well completed in Kansas last week. Production was from Misener sand at 3,769-87 feet, total depth.

Stanolind Oil & Gas Co. No. 6 Hartnett, SE NE NW Section 13-24-11w, two locations west of the Moore well, penetrated Misener sand from 3,762 feet to 3,783 feet, total depth, pumped and flowed 127 bbls. of oil in five hours and made potential of 264 bbls. of oil.

Same company's No. 7 Hartnett, C W half E half NW Section 13-24-11w, pumped and flowed 171 bbls. of oil in four hours, was rated initially at 637 bbls. of oil daily, and potential was adjusted to 1,449 bbls. of oil daily after bottom-hole pressure computation. Misener sand was found at 3,765-89 feet, total depth.

Two new tests at Zenith were reported. Stanolind

REGO



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Construction is rugged and compact . . . forged brass body and bonnet. Operation is safe . . . no seat ignition . . . automatic relief valve at first stage outlet.

The first stage nozzle type and the second stage stem type regulators are perfectly balanced to give a constant volume and pressure flow of gas regardless of drop in tank pressure from full to empty. Double springs and the unusually large 3⅛" diameter second stage diaphragm assure the ultimate in sensitive, accurate control.

RUST...DUST...and DIRT
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A patented removable triple filter cartridge having a filtering area 17 times greater than ordinary regulators removes all foreign matter from the incoming gas . . . thus preventing the chief source of regulator repairs.

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Chicago, Ill.

Oil & Gas Co. No. 5 Fuller, C S half NE SW Section 11-24-11w, and same operator's No. 5 Harper, C S half NW SE Section 11-24-11w, were locations.

Cowley-Sumner Counties

W. M. McKnab No. 3 Byers, NE NE NW Section 21-32-5e, Frog Hollow pool, Cowley County, found Bartlesville sand at 3,055-82 feet, total depth, pumped 147 bbls. of oil in eight hours and made 24-hour potential of 442 bbls.

E. B. Shawver No. 4 West Newton, NW SE NW Section 15-30-4e, Rock pool, Cowley County, had initial production of 15 bbls. of oil in 24 hours. The pay was found in Bartlesville sand at 2,755-80 feet, total depth 2,832 feet.

Leo Wentworth No. 3 Latta, NE NE SE Section 8-30-2w, in the Latta pool, Sumner County, was completed in Lansing-Kansas City lime at 3,172-3,227 feet, total depth. It pumped 34 bbls. of oil in eight hours and made potential of 103 bbls. daily.

Russell County

The largest of three producers completed in Russell County was Stearns Drilling Co. and Vernon Oil & Gas Co. No. 1 Olson, NE NW NW Section 27-14-14w, which extended the Allon pool one-half mile southward. It is about three-quarters of a mile west of the Gurney area. It found Lansing-Kansas City lime at 2,959-3,009 feet, total depth, was acidized, pumped and flowed 997 bbls. of oil in eight hours and made 24-hour potential of 2,992 bbls. Aylward Production Co. was starting work at No. 3 Holl, SE SW SW Section 22-14-14w, the north offset.

Skelly Oil Co. No. 5 Opdycke, SE SE SW Section 29-14-13w, Hall pool, topped Lansing-Kansas City lime at 2,892 feet, was bottomed at 2,914 feet in lime, pumped 589 bbls. of oil in eight hours and was rated potentially at 1,766 bbls. of oil daily.

Stanolind Oil & Gas Co. No. 2 Roesner, SW SW SW Section 9-15-13w, in the Coralena area, pumped 88 bbls. of oil in eight hours and was completed for 24-hour potential of 265 bbls. of oil, with 25 bbls. of water.

Ellsworth County

A large producer was completed in the Edwards pool, southern Ellsworth County, at Continental Oil Co. No. 3 Steinberg, NW NW NW Section 27-17-8w. After penetrating Arbuckle lime from 3,196 feet to 3,246 feet, total depth, it was treated with 3,000 gallons of acid, pumped 564 bbls. of oil in eight hours and made potential of 1,692 bbls. of oil in 24 hours.

Rice County

Two new operations were reported in the recently extended Campbell pool in Rice County. Okan Oil Co. No. 1 Campbell, NW SW NW Section 27-19-9w, was drilling below 1,600 feet. Skiles No. 1-A Campbell, SW SW NW Section 27-19-9w, was drilling below 913 feet.

Kingman County

Garden Production Co. No. 1 Joel, SW SW SW Section 11-27-10w, Shepherd area, Kingman County, found Lansing lime at 3,510 feet and was bottomed at 3,576 feet. It was acidized with 4,000 gallons and pumped 75 bbls. of water and only 6 to 8 bbls. of oil daily, so operators abandoned the test.

Skelly Oil Co. No. 1-D Miles, C S half S half NE Section 19-27-10w, Cunningham area, was a cellar.

Greenwood County

Shull Drilling Co. No. 3 Long, SE SW NE Section 17-23-13, Virgil area, Greenwood County, was completed for 20 bbls. of oil daily. Oil was found in Mississippi lime at 1,741-55 feet, total depth.

O. F. Duncan No. 1 Sauder, C N half SW NW Section 20-23-13, topped Mississippi lime at 1,745 feet, was bottomed at 1,745 feet, where there was only a slight showing of oil with 11 bbls. of water, and it was abandoned.

Markus & Braden No. 5 Thrall, SE NE NE Section 17-24-12, Hamilton area, had spudded and shut down.

A Nebraska Failure

Prunty Production Co. No. 1 Katzberg, C SW Section 26-7n-10w, wildcat about 2 miles southwest of Hastings, Adams County, in South Central Nebraska, was dry and abandoned at 4,005 feet, total depth. It topped Niobrara at 356 feet, Carlisle 591 feet, Greenhorn 886 feet, Dakota 970 feet, Permian 1,390 feet, Topeka 2,320 feet, Lansing 2,680 feet, based Kansas City at 2,972 feet, topped sandy zone at 3,323 feet, Hunton lime 3,375 feet, Simpson zone 3,820 feet, and Arbuckle lime 3,886 feet.

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O-C-T

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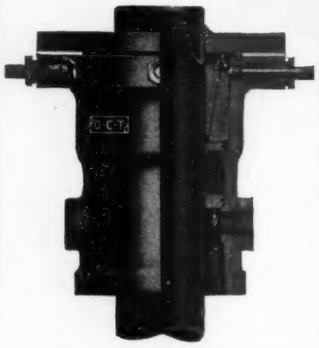

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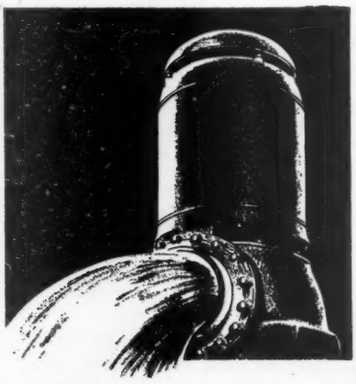

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PERFORMANCE WITH ECONOMY

Among the Drilling

L. T. BURNS, contractor and operator of Wichita Falls, Tex., is indicating a new deep Strawn oil pool for Clay County, North Texas. His No. 1 Browning, Block 94, J. Belcher Survey, in the southwestern part of the county, 6 miles southwest of Blue Grove, drilled oil sand from 4,441 feet to 4,461 feet and on a drill-stem test recovered 1,200 feet of 42-gravity oil in 25 minutes. An electrical survey was made of the hole and revealed three possible producing horizons between 3,300 feet and 4,461 feet. Seven-inch casing has been cemented at 4,433 feet for a test of the horizon.

PRINCE BROTHERS DRILLING CO., Wichita Falls, Tex., has been awarded contract by E. G. Stroube of Fort Worth and L. T. Barton of Sherman for drilling a 6,000-foot wildcat test to the Strawn formation or lower Pennsylvanian, in southern Grayson County, northeastern Texas. Location will be in the southwest corner of 192-acre Millie Williams farm, approximately 1,400 feet from west and 800 feet from north line of the Solomon Nix Survey. The new wildcat is about 150 feet east of a 5,000-foot dry hole drilled in 1934 which was credited with recovering a 4-foot saturated core from 5,042-46 feet. The contractors are to begin moving in machinery as soon as the site has been cleared.

C. T. McLAUGHLIN & CO., INC., drilling contractor of Midland, Tex., is drilling two closely watched tests in Schleicher County's new gas field. The tests are for Lone Star Gas Co. and are No. 1 Bert Page and No. 2 Bert Page. The area is about 10 miles southeast of Eldorado. No. 1 Page, a mile southeast of Cooper Gas Co. No. 2 Page, large gas-distillate producer, is drilling below 3,350 feet while No. 2 Page, a mile north of Cooper Gas Co. No. 1 Page, is drilling below 2,010 feet.

ROBERTS DRILLING CO., Shreveport, La., has been given the contract for the second Trinity test by Arkansas Fuel Oil Co. in the shallow Waskom gas pool of Harrison County, East Texas. The test will be No. 1 James Davis, in the southeast corner of a 40-acre tract in a 113-acre tract, on the south line of the J. Stephenson Survey. The location is 1½ miles northeast of the company's No. 1 Abney, in the E. Little Survey, completed as a gas producer in the Hill section of the basal Glen Rose at 4,850 feet. This is the first of five tests planned by the company in the area, one of which is expected to be taken to 8,000 feet.

O. K. WILLIAM, drilling contractor of Laredo, Tex., has contract for drilling a 4,300-foot wildcat test in Webb County, South Texas. Test will be for Brazos-Young Oil Corp., a North Texas operating firm, and will be No. 1 A. M. Bruni Estate, 5 miles south of Aguilares. Operators are reported to have a block of around 20,000 acres in the area. Location is in the northwest corner of Survey 735, Borrego grant.

REECE & ROSENCRANTZ, drilling contractors of Hillsboro, Tex., are reported to have staked No. 1 M. P. Greenwade ranch, in the Blas Lasall Survey, 8 miles west of the Hill County line in Bosque County, Central Texas. The test is reported projected to the Glen Rose of the Trinity section, expected at about 1,200 feet. The drilling block of 7,000 acres was geologized by H. R. Flowers of Oklahoma.

JOHNSON, KOURI & MARTIN, drilling and producing firm of Wichita Falls, Tex., has added to its holdings in Archer County by the acquisition of a 160-acre lease out of the J. S. Birdwell ranch, in the J. Collingsworth Survey, Abstract 68. The lease has five producers completed in the 950-foot sand, with a total initial production of 64 bbls. of oil.

H. M. HARRELL is rigging up for another test in the Bammel field, Harris County, Texas. The well is being drilled jointly with George P. Lawrence, and is located on the Ehrhardt lease, northwest of production in the George Delesdenier Survey.

ALLEN & MORRIS are completing two wells in the La Rosa field, Refugio County, Texas, for Coronado Corp., while a third test, also being drilled for the same firm is coring for the pay below 6,100 feet. James P. Nash No. 2 Young & Henderson, in the active McCampbell field, Aransas County, is being completed in the 7,100-foot sand, while at the Luby field, Nueces County, two wells are in process of completion for Seaboard Oil Corp.

RUTHERFORD DRILLING CO. opened a new sand in the La Rosa field, Refugio County, Texas, with

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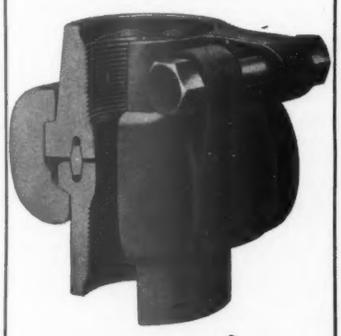

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HOUSTON, TEXAS

the completion of Rutherford Oil Corp. No. 1-B Shirmer. The well was drilled to a total depth of 6,505 feet and was completed through perforated casing at 6,108-11 feet, for an initial production of 154 bbls. daily, flowing through an eighth-inch choke.

HARRY L. EDWARDS DRILLING CO. cored oil sand in Kirby Petroleum Co. No. 1 Daniel, an outpost test 1½ miles northeast of the Fairbanks field, Harris County, Texas, and casing is being cemented for completion. The sand was cored at 7,227-48½ feet and the hole is bottomed in salt water sand at 7,252 feet.

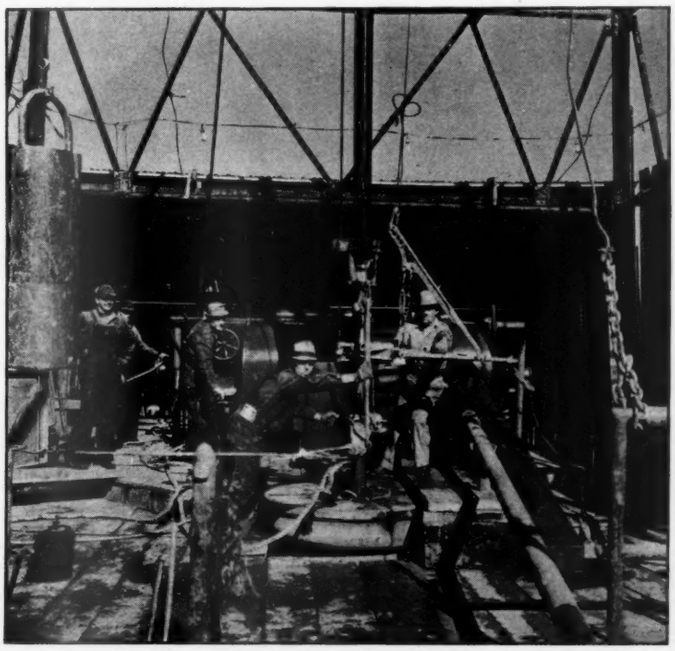
BIG CHIEF DRILLING CO. No. 2 Canfield, SW cor. Section 33-7-5, Pottawatomie County, Oklahoma, was preparing to acidize at 4,144 feet after encountering a show of oil.

COOPER DRILLING CO. has two new producers in the Sac and Fox pool in Lincoln County, Oklahoma, at No. 3 State land, SW SE NE Section 16-14-6, and No. 7 State land, SW NE NE of Section 16-14-6. No. 3 State, drilled to a total depth of 3,087 feet, was 15 feet off bottom when a light bulb broke and ignited the oil and gas. It broke loose and flowed to clean itself out. The fire was extinguished after about three hours and the well was flowing with no gauge available.

COMMERCIAL DRILLING CO., Tulsa, No. 1 Harber, in NW SW SE Section 32-7-6e, in the Dora pool of Seminole County, Oklahoma, was drilling at 2,910 feet after encountering small oil show at 2,500 feet.

HUGHES DRILLING CO. No. 1 Meisner, NW NW NW Section 10-20-4w, Garfield County, Oklahoma, has been drilling at 5,580 feet in the first Wilcox, which was topped at 5,530 feet. It had 500 feet of water in the hole and will be drilled to the second Wilcox.

TRINITY DRILLERS, INC. is moving in a large rotary to the Yturria area, Willacy County, Texas, for C. Andrade and others No. 1 Yturria which is approximately 600 feet east of a deep test, drilled by Shell Petroleum Corp. Two operations are reported for Continental Oil Co. in the Driscoll field, Duval County, and for Transwestern Oil Co. in the McFaddin field, Victoria County.



Drilling crew on Bert Fields No. 1 Humphrey, southernmost test in Griffin pool (Avoca townsite) of West Central Texas: T. A. McCarty, derrick man; E. L. Cowan, fireman; W. A. Parks, driller; W. McAlpine, helper; and Roy Selman, helper

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California Field Report

By
L. P. STOCKMAN

Conservation For California Meets With Hard Opposition

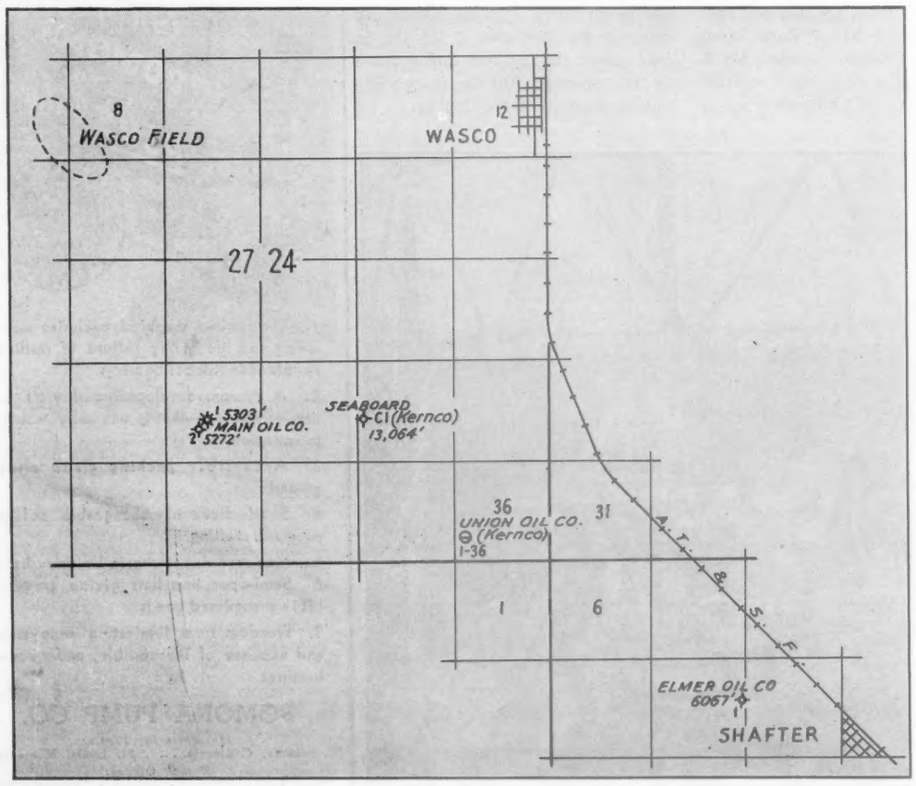
LOS ANGELES, Calif., Feb. 27.—The Central Committee of California Oil Producers, official curtailment group, and the Emergency Executive Committee which stepped into the breach last December when something had to be done to avert a price cut were given something else to worry about in the past week when the situation in the Santa Maria Valley field got out of control. Operators in that field some time ago agreed to suspend drilling for a year provided on outlet was given for crude oil produced in accordance with the allowables set by the oil umpire. The present situation developed as the result of the starting of two wells by E. H. Moore in Section 19-10-34 and one each by George F. Getty and Gerard & Thompson in Section 27-10-34. The starting of work on these wells will make it necessary for other operators to prevent drainage by drilling new wells on adjacent acreage.

E. E. Pyles, chairman of the Emergency Executive Committee has issued a statement to the effect that if the present program of development in the Santa Maria Valley field is carried out it may lead to a price-cut all down the line. The statement in question points out that "the recent violation of the no-drilling pact by the E. H. Moore Co. in the Santa Maria Valley field has resulted in Union Oil Co., the main crude oil purchaser, giving notice it may discontinue its 10,000 bbls. a day purchases in the field." Should this policy be carried out, and it appears imminent that it may, operators in the Santa Maria Valley field would be obligated to ship by truck to Los Angeles or dispose of current production locally at lower prices. As was the case last year, if Union Oil Co. discontinues its 10,000 bbls. a day purchases the going price of Santa Maria Valley crude oil will drop to at least 40 cents per barrel.

In the Elk Hills field of Kern County, Richfield Oil Corp. is still overproducing but is willing to reduce production to the prescribed allowable if the life of the leases is extended so that the company would not lose the amount of oil involved. Richfield's leases in the Elk Hills field expire in 1941 but the company is willing to reduce production provided an extension is granted. Up to the present it has been unable to work out a modified lease arrangement with the Navy Department despite the statement that the Navy Department would cooperate in the present curtailment program. The situation with respect to Elk Hills is of minor consideration when compared with the potential possibilities resulting from the junking of the Santa Maria Valley drilling and production pact.

New Field

Standard Oil Co. removed any doubt about the existence of a new oil field in the Arvin district of Kern County when No. 1 Jewett in Section 16-31-29 was brought in flowing 850 bbls. of clean 33.1-gravity oil and 500,000 cu. ft. of gas per day from 6,270 feet. This joint test, drilled by Standard Oil Co., Superior Oil Co. and Texas Co., is bottomed in the Chanac of the Kern River series at 6,270 feet. The well has 210 feet of formation open to production as the 6⅝-inch water string was cemented at 6,060 feet. It is west of the Mountain View fault in contrast with previous wildcats which had been drilled in the area. This condition is somewhat similar to conditions found in the southeastern end of the Mountain View field and the new district is expected to show comparable characteristics from a drilling and production standpoint. Acreage in the new pool is rather cut up, the average lease covering around 80 acres. North of the new well, North American Consolidated Oil Co. and P. H. Greer hold leases totaling 160 acres each, in addition to 80 acres held by Richfield Oil Corp. and Hogan Petroleum Corp. with a like amount. Other nearby holdings include Standard Oil Co. with 240 acres, Hancock Oil Co. with 40 acres, Texas Co. with 160 acres, Superior Oil Co. with 160 acres and other scattered holdings. This is believed to be a new field with the accumulation of oil and gas trapped behind the Mountain View fault. Present indications, based on drilling operations, are that the productive area will be rather limited. The new Arvin field may have some connection with the two small wells completed southeast of the discovery well by General Petroleum Corp. more than a year ago. Completion of No. 1 Jewett marks the first field discovered in California in 1939.



Union Oil Co. is rigging up rotary for a wildcat in Section 36-27-24 on property leased from Kern County Land Co. The wildcat is located southwest of Wasco and northwest of Shafter and a short distance southeast of a wildcat drilled by Seaboard Oil Co. to a depth of 13,064 feet

Torrance

Five new wells were completed in the Torrance field of Los Angeles Basin and all of them were located in the Eshelman section of the field. No. 2 Lomita of the Whittier Santa Fe Springs Syndicate was completed flowing at the rate of 1,950 bbls. per day, based on a one-hour production test. The well actually tanked 750 bbls. of clean 26.5-gravity oil during the initial 24-hour test following completion at 5,180 feet. This well is at 237th Street and Eshelman Avenue. It was finished with a 7-inch water string cemented at 4,805 feet and was brought in flowing through a 40/64-inch bean behind which it showed a flow pressure of 175 pounds. Alford Oil Co. No. 12 Lomita was completed flowing 985 bbls. of very clean 26.7-gravity oil through a 38/64-inch bean from 5,179 feet. This hole was finished with a 7-inch water string landed at 4,896 feet and 323 feet of 5½-inch liner including 283 feet of 120-mesh screen landed on bottom. Alford Oil Co.'s well No. 12 is at 238th Street and Eshelman Avenue and appears to be on the same structural trend as Felix Mallon No. 2, a recent completion which tends to indicate a definite flattening of the structure at this point.

Two of the five new wells in the Eshelman section were at 236th Street and Eshelman Avenue. These wells were Kern Petroleum Co. No. 1 Neher, flowing 311 bbls. of relatively clean 25.9-gravity oil per day and Plymouth Oil Co. No. 2 Lomita, flowing 340 bbls. of clean 26.3-gravity oil daily. The former completed at 5,120 feet was finished with a 6⅝-inch water string while the latter, bottomed at 5,158 feet, was finished with a 7-inch water string both being landed at 4,796 feet.

W. E. Caslin completed a good well when No. 1 Springman, located at 238th Street and Eshelman Avenue, was brought in flowing 480 bbls. of clean 26.6-gravity oil per day from 5,168 feet after the hole had been finished with a 6⅝-inch water string landed and cemented at 4,810 feet. Just previous to completion of this well, McCaslin erected a new rig on the White property at 237th Street and Eshelman Avenue and thus the crew did not lose any time in moving from one job to the other. Kovell Oil Co., which recently extended the Torrance field by completing

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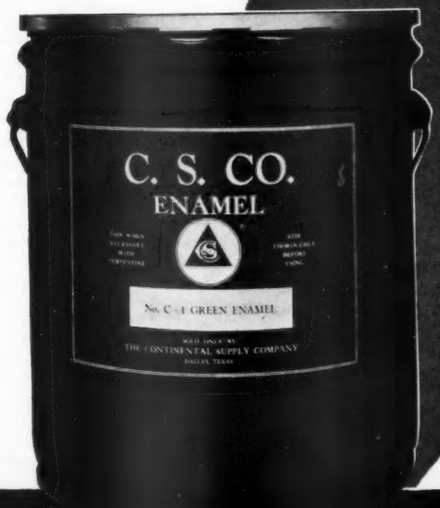

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No. 1 Deep Hole at 240th and Walnut streets in the southeastern end of the Torrance field, flowing 772 bbls. of 28.1-gravity oil per day from 5,163 feet, has just completed derrick for No. 2 Deep Hole which will be drilled at 242nd Street and Eshelman Avenue on the assumption that a lateral shift has taken place in the Torrance structure to the southwest due to faulting. The effect of this projected fault has not been determined although it will be noted that the gravity of crude oil produced by No. 1 Deep Hole is about 2 degrees higher than the average gravity of crude produced in the Lomita and Eshelman sections of the field. This is particularly interesting because it more closely approximates the grade of crude oil produced in the Harbor City area located south of the Lomita section of the Torrance field. General Petroleum Corp. completed No. 13 Poggi in the Harbor City section of the field flowing 310 bbls. of clean 28.2-gravity oil per day from 5,174 feet. This new well, located at Lomita and Vermont Avenue, was brought in flowing through a 24/64-inch bean after the hole had been finished with a 7-inch water string landed at 5,037 feet.

Wilmington

Two new wells were completed in the Wilmington field of Los Angeles Basin this week but neither was given an opportunity of establishing a potential due to the agreement among operators to refrain from opening up either new or old wells for potential production tests as this aggravates a production situation that is difficult to handle. On the Harbor Community lease, General Petroleum Corp. completed No. 32 flowing 510 bbls. of very clean 24.2-gravity oil per day from the Terminal zone with bottom of the hole at 4,060 feet. This well was finished with a string of 11¾-inch landed at 2,510 feet and a combination 8⅝-inch and 6⅝-inch liner landed at 4,060 feet and cemented through perforations at 3,605 feet with 75 sacks of cement and at 3,209 feet with 95 sacks of cement. The 8⅝-inch included 1,100 feet of 6⅝-inch on the bottom. Perforations were at 2,510-2,880 feet, 3,610-3,790 feet and at 3,830-4,060 feet. Sonwell Oil Co. successfully completed No. 5 Harbor flowing 429 bbls. of clean 23.8-gravity oil per day from the Terminal zone with bottom of the hole at 4,015 feet. This new well which was brought in flowing through a 32/64-inch bean was finished with a 10¾-inch water string landed at 2,541 feet and a combination liner. Signal Oil & Gas Co. has started to move with its development program in the Long Beach Harbor section of the Wilmington field and with three strings of tools in operation at present should have another two wells under way within the next week.

Production of the Wilmington field stands out in bold relief with an excess over allowable of more than 15,000 bbls. per day. This field is given an allowable production of 68,820 bbls. by the Central Committee of California. It may be possible that if the Santa Maria Valley field gets out of line it may have a very decided effect in production of the Wilmington field especially if the existing price structure takes a nose dive. The greater part of the overage in crude oil production is due to excess production in the Elk Hills, Ventura Avenue, Huntington Beach, Long Beach, Montebello, Rosecrans, Torrance and Wilmington fields with the last named field being the greatest offender.

Montebello Extension

Only one well was completed in the western extension of the Montebello field of Los Angeles Basin but it proved to be an excellent well and extended the eastern productive limits a few hundred feet. The new well was Union Oil Co. No. 1 Calkins which tanked 1,590 bbls. of 32.3-gravity oil during the 24-hour production test from the lower finger of the sixth zone. No. 1 Calkins was carried down into the top finger of the seventh zone but this zone was not produced as the blank liner was perforated opposite the Masser zone and the seventh zone cemented off. This is in accordance with the projected plan approved by all operators except one to refrain from developing the seventh zone until next year. The success of this program depends upon new drilling getting under way north, east and south of Union's new well. Olympic Refining Co., which recently completed No. 1 Smith Community in the seventh zone flowing 750 bbls. of clean 35.9-gravity oil from the upper finger of the seventh zone has killed the flow and is making preparations to plug back and produce the Masser zone or lower finger of the sixth zone. This move is in keeping with the announced intention of the company to try out the seventh zone for a period of a week or 10 days and then plug back to the sixth. No. 1 Smith Community is bottomed at 7,136 feet in the seventh zone but the 6⅝-inch will be perforated above this horizon.

McVicar & Rood, one of the pioneers in the western extension of the Montebello field, deepened No. 1 Manz into the seventh zone and opened additional data on this zone. No. 1 Manz is bottomed in the seventh zone at 7,232 feet but these operators have landed a string of 6⅝-inch casing on bottom and will limit production for the present to the fourth finger of the sixth zone. Two commercially productive fingers were cored in this well in the top of the seventh zone. The first probably productive finger of the seventh was logged at 6,916-45 feet and the second good looking oil sand was cored at 7,055-80 feet. This indicates that the top of the seventh zone is higher at this point on the structure than in the Calkins area to the east. The decisions of McVicar & Rood and Olympic Refining Co. to delay exploitation of the seventh zone improved the outlook with respect to production of the Montebello field as most operators do not want to produce below the sixth zone as this would complicate curtailment activities and might lead to a weakened crude oil market which neither the major operators or smaller independent refiners want. A very determined effort has been made by producers and refiners in California to go through the present winter months without encountering price recessions. There has been no desire for higher prices as practically the entire industry would be greatly satisfied with the maintenance of existing schedules.

Graham & Loftus have taken a lease on a small triangular piece comprising one location and are rigging up rotary drilling equipment preparatory to beginning actual work within a few days. Herley-Kelly, Inc., have concluded drilling operations on No. 2 Burke Community in the town lot section of the field at 6,803 feet but will produce the Masser zone where an excellent saturated oil sand was cored at 6,680-6,745 feet.

Rosecrans

Three new wells were completed in the Rosecrans field of Los Angeles Basin. Isco Petroleum Corp. No. 2 Abel was finished flowing 740 bbls. of clean 32.8-gravity oil and 700,000 cu. ft. of natural gas per day from the O'Dea zone through a 40/64-inch bean. This well shows a flow pressure of 170 pounds and has the casing packed off. No. 2 Abel was finished with a 7-inch water string landed at 7,632 feet and 171 feet of 5½-inch liner including 135 feet of perforated landed at 7,727 feet and 7,700 feet of 2½-inch tubing. Superior Oil Co. finally completed No. 12 Maxwell Community but the well was good for only 210 bbls. of 32.1-gravity oil cutting 5 per cent. It was carried down to 8,852 feet and then plugged back to 7,696 feet. Union Oil Co. completed No. 28 Rosecrans flowing 728 bbls. of 32.3-gravity oil and 1,800,000 cu. ft. of gas per day from the O'Dea zone with bottom of the hole at 7,735 feet. In the Huntington Beach field, Southwest Exploration Co. completed No. 8 State in the Huntington tideland accumulation pumping 290 bbls. of 25.6-gravity oil per day from 4,372 feet.

San Joaquin Basin

Although drilling operations in the Rio Bravo field of Kern County in the San Joaquin basin have been reduced to a minimum this field still is one of the most important factors from a production standpoint in Kern County. Only one dry hole has been drilled in the field and thus the limits of production have only been defined in one direction. The duster was Superior Oil Co. No. 1 Helbling in Section 1-39-25 southeast of the top of the structure. This well, bottomed at 14,018 feet, wound up in basement rocks of altered diabase very similar to that found in the Texas Co. No. 1 Camp-Lowe a wildcat in the Fruitvale district of Kern County in Section 7-29-27. Lying just above the basement in the Helbling well was a body of sugary gray sand resembling the Gatchell sand of the Southeast Coalinga field of Fresno County and definitely of Eocene age. From 9,000 feet to 12,000 feet No. 1 Helbling cored one of the most intensively fractured zones ever cored in a well in California, indicating a fault of major proportions which probably parallels the Greeley-Rio Bravo-Wasco structural trend for many miles.

In the Ten Section field of Kern County, Shell Oil Co. has completed No. 6-30-B Kern County Land in Section 30-30-26 flowing 3,586 bbls. of clean 33.2-gravity oil and 2,700,000 cu. ft. of natural gas per day from the Stevens zone with bottom of the hole at 8,200 feet.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	February 18		February 11			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	60,642	8,663	60,642	.....
Fuel oil	.....	.....	130,894	18,699	263,259	.....
Diesel and gas oil	.....	.....	.....	.....	163,501	.....
Gasoline	.....	.....	66,715	9,531	66,715	344,116
Kerosene	.....	.....	56,940	8,134	56,940	59,885
Lubricants	.....	.....	.....	.....	37,621	.....
Foreign exports—						
Crude oil	262,614	37,516	485,395	69,342	1,882,842	2,564,149
Fuel oil	157,477	22,497	27,647	3,950	1,082,960	604,562
Diesel and gas oil	28,726	4,104	.....	.....	490,525	432,985
Gasoline	80,201	11,456	100,712	14,387	920,065	793,572
Kerosene	52,790	7,541	29,580	4,226	206,933	147,775
Coastwise-domestic—						
Crude oil	348,139	49,734	151,116	21,588	1,211,119	1,214,831
Fuel oil	158,188	22,598	164,526	23,504	1,197,671	1,776,356
Diesel and gas oil	60,314	8,616	51,510	7,359	412,608	231,148
Gasoline	173,281	24,754	406,047	58,007	1,628,454	1,805,497
Kerosene	3,624	518	7,289	1,041	37,292	42,756

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	69,550	178,662
Lubricants	.....	.....	.....	.....	4,170	.....
Foreign exports—						
Crude oil	.....	.....	.....	.....	488,307	580,577
Fuel oil	.....	.....	.....	.....	197,240	101,650
Diesel and gas oil	.....	.....	.....	.....	64,649	118,920
Gasoline	.....	.....	.....	.....	360,110	305,402
Kerosene	.....	.....	.....	.....	49,227	85,841
Lubricants	.....	.....	.....	.....	3,386	.....
Coastwise-domestic—						
Fuel oil	172,314	24,616	264,971	37,853	437,285	905,456
Diesel and gas oil	32,161	4,594	4,397	628	36,558	301,952
Gasoline	188,718	26,959	118,329	16,904	307,042	954,565
Kerosene	35,906	5,129	16,252	2,322	52,158	134,936

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	.....	.....	60,642	8,663	60,642	.....
Fuel oil	.....	.....	130,894	18,699	263,259	.....
Diesel and gas oil	.....	.....	.....	.....	233,051	178,662
Gasoline	.....	.....	66,715	9,531	66,715	344,116
Kerosene	.....	.....	56,940	8,134	56,940	59,885
Lubricants	.....	.....	.....	.....	41,791	.....
Foreign exports—						
Crude oil	262,614	37,516	485,395	69,342	2,371,149	3,144,726
Fuel oil	157,477	22,497	27,647	3,950	1,280,200	706,212
Diesel and gas oil	28,726	4,104	.....	.....	555,174	551,905
Gasoline	80,201	11,456	100,712	14,387	1,280,175	1,098,974
Kerosene	52,790	7,541	29,580	4,226	256,160	233,616
Lubricants	.....	.....	.....	.....	3,386	.....
Coastwise-domestic—						
Crude oil	348,139	49,734	151,116	21,588	1,211,119	1,214,831
Fuel oil	330,502	47,215	429,497	61,357	1,634,956	2,681,812
Diesel and gas oil	92,475	13,211	55,907	7,987	449,166	533,100
Gasoline	361,994	51,713	524,376	74,911	1,935,496	2,760,062
Kerosene	39,530	5,647	23,541	3,363	89,450	177,692

Texas and Louisiana Gulf

By
NEIL WILLIAMS

New Productive Spot Found, Cameron Parish, Louisiana

HOUSTON, Tex., Feb. 27.—The discovery of oil sand in a semiwildcat in the Goodykoontz area, 1½ miles northeast of the Fairbanks field, Harris County, and the opening of the first crude production in the Chalkley area, Cameron Parish, coastal Louisiana, held the attention of operators in the Gulf Coast district in the past week.

Kirby Petroleum Co. No. 1 Daniel, S. S. Reynolds Survey, approximately 6,000 feet northeast of Union Producing Co. No. 1 Goodykoontz, a distillate producer, was running an electrical survey preparatory to cementing casing to test 21½ feet of oil sand at 7,227-48½ feet. The hole is bottomed at 7,252 feet in salt water sand which was topped at 7,248½ feet. Additional sands, all of which carried gas and distillate odors, were cored at intervals in the regular Fairbanks horizon at 6,745-6,845 feet, and in the "Look" and Goodykoontz horizons at 6,906-45 feet and 7,160-82 feet.

Attention was first attracted to this area in August of last year following the completion of Union Producing Co. No. 1 Goodykoontz, which was drilled to a total depth of 7,617 feet, logging several showings below its present producing depth of 7,175-85 feet It is generally believed that this area is on the same general structure as Fairbanks, and that production will be developed from a deeper sand due to a faulted, or lenticular sand condition.

League City's Good Well

The best producer completed in the League City field, Galveston County, since the completion of the discovery well, is George Echols No. 2 Ross-Stewart, which extended production about 1,200 feet south. The well was drilled to 9,283 feet, and completed in the discovery horizon at 9,236-60 feet. On a potential gauge it flowed 1,074 bbls. of 40-gravity oil through a quarter-inch choke. While this well was being completed the west side of the field was being defined by Salt Dome Oil Corp. No. 1 Ross-Stewart which is flowing an estimated 4 bbls. of fluid per hour of which 20 per cent is salt water and the balance oil. This test was drilled to 10,001 feet, and completed through perforated casing at 8,965-75 feet. Offsetting the discovery well to the north, Phillips Petroleum Co. No. 1 is bottomed at 10,545 feet, with casing cemented on bottom. An electrical survey is reported to have shown several sands below 9,300 feet.

Jefferson County

The north extension area of the Lovells Lake field (Cheek), Jefferson County, was defined to the north with the abandonment of Humble Oil & Refining Co. No. 1 Broussard. A slight showing was logged at 7,743-44 feet, and the hole was abandoned in salt water sand at 7,792 feet. In the same area, Humble No. 1 Fallor proved to be an edge well, as it was completed through perforated casing at 7,720-25 feet, flowing 4 bbls. of fluid per hour, of which 24 per cent was salt water and the balance pipe line oil. The well is flowing through a quarter-inch choke under a tubing pressure of 800 pounds. In the southern part of the field, and southwest of production, Shell Petroleum Corp. is rigging up for No. 1 Steinhagen.

Showing in Jackson County

In Jackson County, Magnolia Petroleum Co. No. 8-A West has apparently extended the West Ranch field 1,320 feet west as sand, showing oil, was topped at 5,106 feet and cored to a total depth of 5,133 feet. Seven-inch casing was cemented at 5,123 feet.

Sun Oil Co. No. 2 Cade, on the Caplen prospect, Galveston County, was being watched with much interest as a protection string of 9⅝-inch casing was being cemented at 8,009 feet, total depth. An electrical survey is reported to have shown several possible oil-bearing sands at 7,200-7,320 feet. The well is in the A. Dickson Survey, 1 mile southwest of the company's No. 1 Humphrey, a dry hole.

Matagorda County

In Buttermilk Slough area, 3½ miles west of Palacios, Matagorda County, Sun Oil Co. No. 1 Cavalin, John Duncan Survey, is bottomed in hard sand showing gas at 9,318 feet and the company is preparing to core ahead. The sand section topped at 9,313 feet is believed to be the same that produces in the Palacios field.

Orange County

In the Echo area, Orange County, Sun Oil Co. No. 1-A Lutcher-Moore was tested through perforated casing at 6,320-30 feet, and showed salt water with no oil or gas. This well was originally tested at 8,995-9,010 feet, and flowed various quantities of oil and salt water. Tubing is being pulled and it is believed that additional tests will be made in the latter horizon.

In Colorado County, Mills Bennett Production Co. and others No. 1 J. M. Truchard, Edward Corbit Survey, has reached a contract depth of 7,505 feet, and is now shut down. The top of the Mount Selman formation was topped at 6,679 feet, and the hole is believed to be bottomed in the Wilcox sand (Tertiary), although the top of the section has not been reported. No oil showings have been reported.

Location for another Wilcox sand test which is scheduled to get under way in the near future was announced for the Willis area, Montgomery County, by O. C. Gravey and others. The well is located on the Foster Lumber Co. lease, about 5½ miles west of the town of Willis in the Neil Martin Survey.

South Louisiana

Along the Louisiana Coast, new development was getting started in the Chalkley area, Cameron Parish, following the completion of Humble Oil & Refining Co. No. 1 Cameron Parish School Board, which converted this distillate area into an oil field. This test was completed through perforated casing at 8,949-59 feet, and it flowed 460 bbls. of 38-gravity oil through a three-sixteenths inch choke under a tubing pressure of 1,400 pounds. The well is located in section 16-12s-6w, about 1 mile south of the company's No. 2 Hanzen, the discovery well, which is producing distillate from sand at 8,562-68 feet. Location was made for the company's No. 2 Cameron Parish School Board in Section 16-12s-6w, approximately one-half mile north of No. 1, while Shell Petroleum Corp. is reported to have staked location for another test.

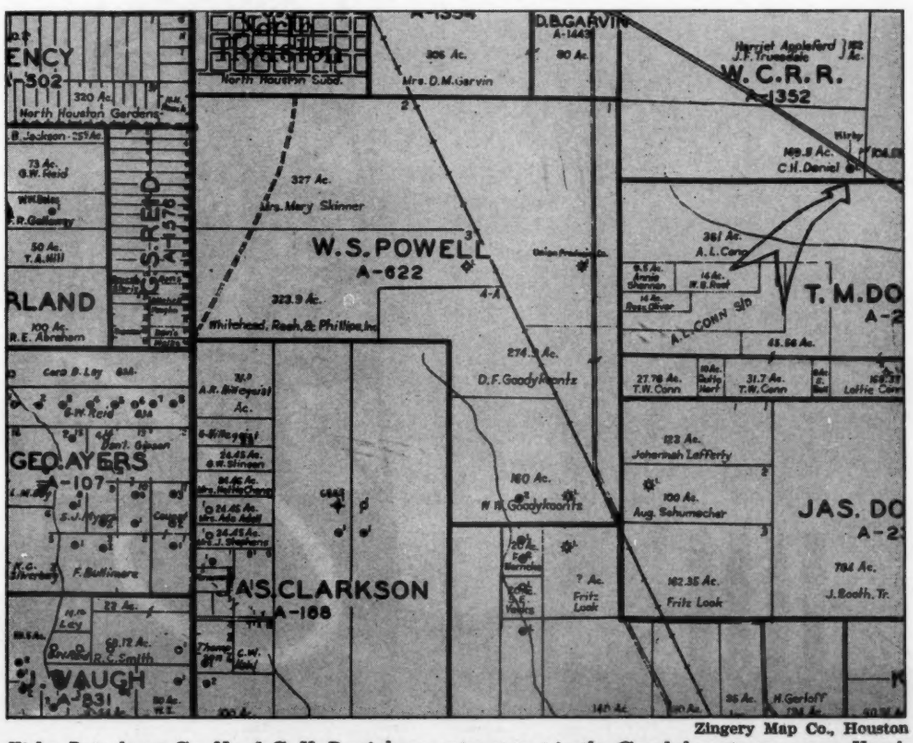
Superior Oil Co. opened another sand on the southwest flank of the old Jennings field, Acadia Parish, with the completion of No. 16 Leckelt, which is flowing 311 bbls. per day through a 12/64-inch choke. The hole is bottomed at 8,304 feet, and the well is flowing through perforated casing at 8,204-29 feet. It is in Section 48-9s-2w, about 800 feet from production.

In the Creole field, offshore from Cameron Parish in the Gulf of Mexico, Superior Oil Co. No. 5 State-Gulf of Mexico had reached a depth of 5,830 feet with no showings reported. At the present depth the hole is approximately 600 feet below the normal depth from which four other wells are producing.

Eola Activity

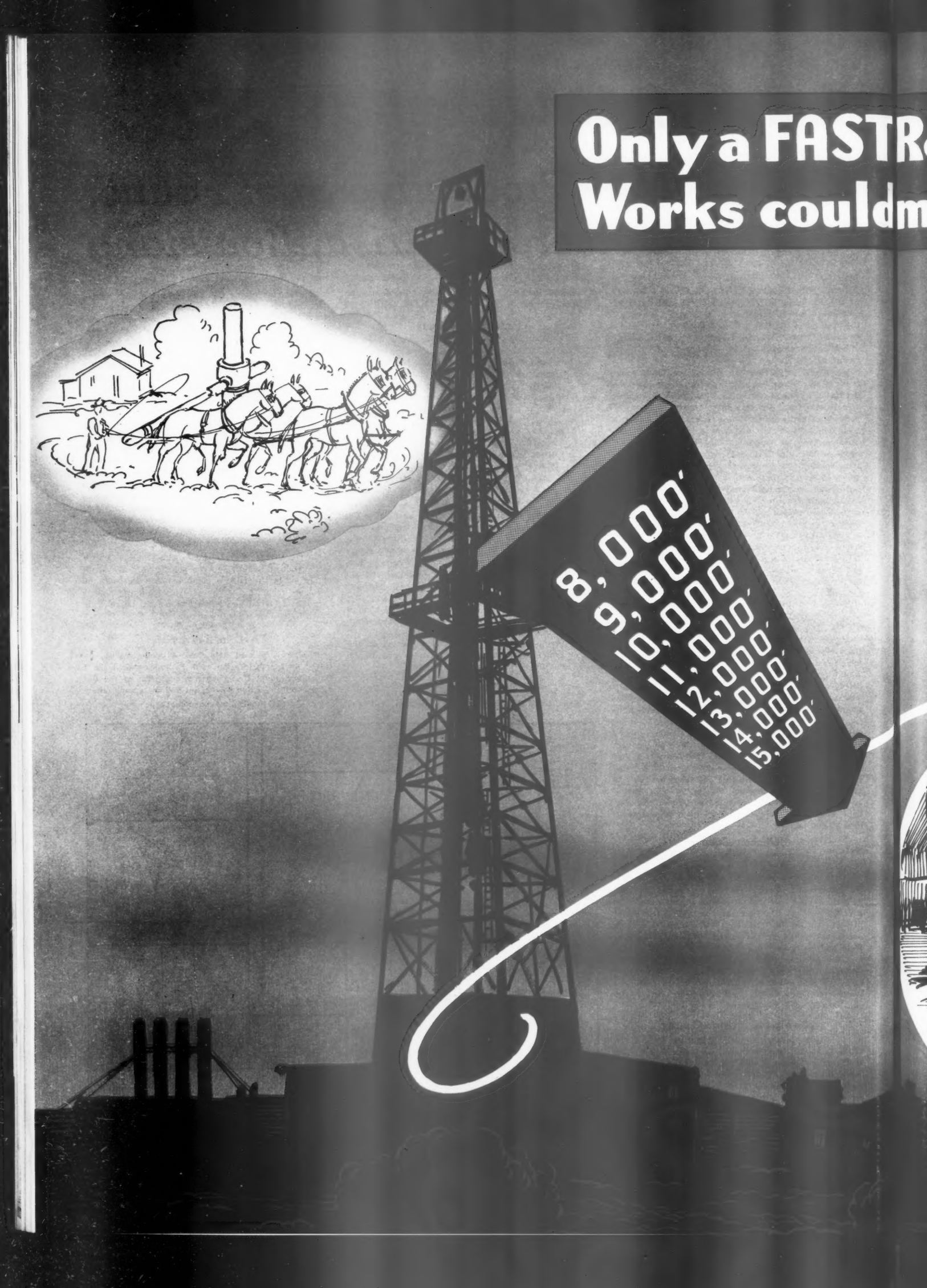
The newly opened Eola field, Avoyelles Parish, received its fourth location as J. E. Jones staked No. 1 Haas Investment Co., 4,000 feet southeast of the discovery well in Section 8-2s-3e. Sid Richardson and others

(Continued on Page 88)



Zingery Map Co., Houston

Kirby Petroleum Co. No. 1 C. H. Daniel, an outpost test in the Goodykoontz gas area, Harris County, which is preparing to test after coring oil sand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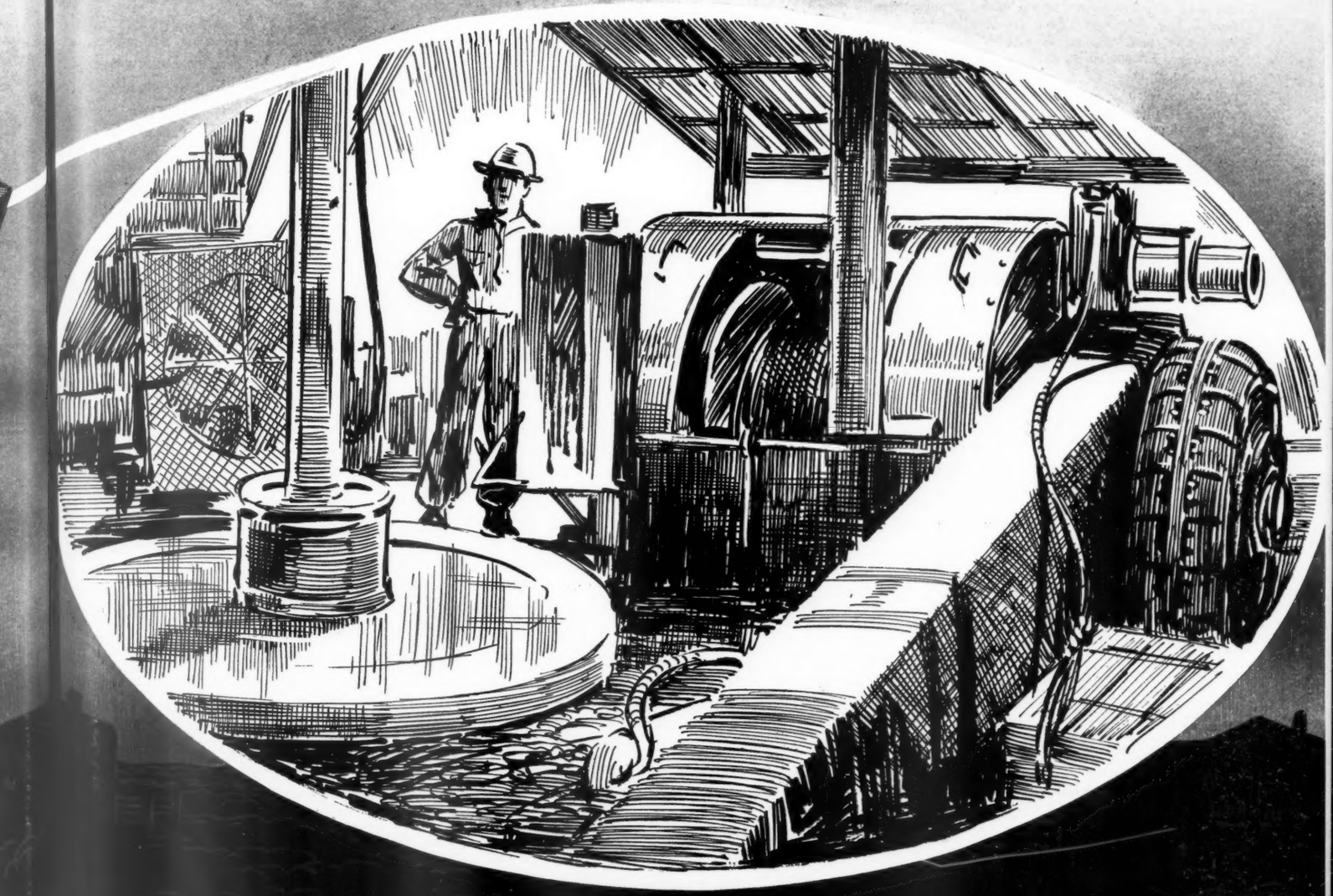

Rocky Mountain Area

By
T. R. INGRAM

Lance Creek Leo Sand Test a Failure; Completions Few

DENVER, Colo., Feb. 27.—Colorado will use 10,000,000 gallons of road oil for highway surfacing in 1939 and bids have been called for on first installment.

Wyoming had five completions, of which three were dry holes, and one new operation. Ohio Oil Co.-California Co. No. 7 Union Pacific, marking the limits of Sundance sand production in Big Medicine Bow, was abandoned. The Argo Oil Co. No. 9-A Elliott made 598 bbls. initial from Sundance sand in Lance Creek. In the same field Ohio No. 1 Leo-O.P.C.-7 failed to find production in second Leo sand and was abandoned. Sinclair-Wyoming completed an average well in Lost Soldier and the test at the north end of the Dewey dome was dry.

Montana had three new operations, including a test on the Hagan structure southwest of Cut Bank field, and no completions.

NEW MEXICO

Paul B. English No. 1 Miller, C NE SE Section 18-19-32, wildcat in western Lea County, southeastern New Mexico, started work and was drilling below 305 feet in red rock on latest report. It is about 5 miles southeast of the Shugart-Coulthard area. Plains Production Co. has the contract to drill the well.

The largest of three producers completed in the Vacuum field, Lea County, was Phillips Petroleum Co. No. 23 Santa Fe, C SW SW Section 26-17-35. It flowed 284 bbls. of oil naturally in 5½ hours through three-fourths inch choke on tubing set at 4,576 feet, total depth 4,580 feet. Top of pay was found at 4,200 feet. Gas gauged 875,000 cu. ft. daily.

Same company's No. 21 Santa Fe, C NE NE Section 33-17-35, found pay at 4,200 feet and flowed 160 bbls. of oil in five hours, naturally. After acidizing, it flowed 152 bbls. of oil in four hours through open tubing.

Humble Oil & Refining Co. No. 1-K State, C SE SE Section 28-17-35, swabbed and flowed 17 bbls. of oil an hour from pay topped at 4,205 feet, total depth 4,640 feet.

In the Penrose area, Lea County, Two States Oil Co. No. 4-B Cole, C SW NW Section 16-22-37, was completed naturally at total depth of 3,690 feet, flowing 30 bbls. of oil in six hours, with gas estimated at 400,000 cu. ft. daily. It topped pay at 3,635 feet and was bottomed at 3,690 feet.

Other southeastern New Mexico completions, all in Lea County, were

Continental Oil Co. No. 4 Lockhart B-1, C W half SW NE Section 1-22-36, found pay at 3,742 feet and flowed 47 bbls. of oil hourly for two hours, with 702,000 cu. ft. of gas. The well was bottomed at 3,800 feet.

Richmond Drilling Co. No. 1-A State, C NW SW Section 2-25-37, flowed 76 bbls. of oil in four hours after setting packer at 3,338 feet. Gas gauged 1,201,000 cu. ft. daily. Pay was topped at 3,361 feet, total depth 3,446 feet.

R. Olsen No. 1 Blinebry, C SW SW Section 29-23-37, topped pay at 3,541 feet, total depth 3,575 feet, and flowed 211 bbls. of oil naturally in 24 hours through choke on tubing set at 3,568 feet.

Lea County

Barnsdall Oil Co. No. 1 Humble-State, C NE SE Sec. 33-16-36. T.D. 5,269 ft.; S.S.O.; to acdz.
Carper-Taylor No. 1 Taylor (wildcat), SW SW SW Sec. 30-16-32. Drlg. 1,865 ft.
Continental Oil Co. No. 1-A Sanderson B-14, C N½ NW NW Sec. 14-20-36. W.O.C. 1,443 ft.
Continental Oil Co. No. 5 State H-35, C SW NE Sec. 35-17-34. W.O.C. 1,565 ft.
Humble O. & R. Co. No. 2-K State, C NW NE Sec. 32-17-35. Drlg. 4,600 ft.
Humble O. & R. Co. No. 3-K State, C NE SE Sec. 28-17-35. Drlg. 1,600 ft.
Magnolia Pet. Co. No. 1-O State, C NW SW Sec. 33-17-35. Drlg. 3,300 ft.
Magnolia Pet. Co. No. 1-P State, C SW SE Sec. 22-17-35. Drlg. 1,330 ft.
Magnolia Pet. Co. No. 2-J State, C NW SE Sec. 22-17-34. T.D. 4,740 ft.; acdz.; S.&F. 3 B.O.P.H.
Magnolia Pet. Co. No. 3-J State, C SE NE Sec. 22-17-34. Loc.
Magnolia Pet. Co. No. 25 State-Bridges, C SE NE Sec. 26-17-34. T.D. 4,650 ft.; S.O. 4,300 ft.
Magnolia Pet. Co. No. 26 State-Bridges, C SE SW Sec. 26-17-34. Drlg. 3,537 ft.
Magnolia Pet. Co. No. 27 State-Bridges, C SE NE Sec. 26-17-34. Loc.
Maljamar O. & G. Co. No. 2-B Baish, C NE NE Sec. 27-17-32. T.D. 2,602 ft.; S.D.O.
Maljamar O. & G. Co. No. 1-B Mitchell, C NE SE Sec. 20-17-32. T.D. 3,591 ft.; W.O.C.
Maljamar O. & G. Co. No. 2 Mitchell, SW SE SW Sec. 5-17-32. R.U.S.T.
Ohio Oil Co. No. 1 State-Warn, C SE NE Sec. 33-17-35. Drk.
Ohio Oil Co. No. 2 State-Staplin, C NE SW Sec. 30-17-35. Drlg. 3,985 ft.
Phillips Pet. Co. No. 12 Santa Fe, C NE SW Sec. 28-17-35. T.D. 4,700 ft.; C.O.
Phillips Pet. Co. No. 15 Santa Fe, C NE NE Sec. 28-17-35. T.D. 4,700 ft. C.O. 4,588 ft.
Phillips Pet. Co. No. 20 Santa Fe, C SW SW Sec. 27-17-35. W.O.C. 2,148 ft.
Phillips Pet. Co. No. 24 Santa Fe, C NE NE Sec. 34-17-35. Drlg. 3,513 ft.
Phillips Pet. Co. No. 25 Santa Fe, C NW SE Sec. 30-17-35. T.D. 4,667 ft.; swbg.
Phillips Pet. Co. No. 26 Santa Fe, C NE SW Sec. 29-17-35. Drlg. 3,669 ft.
Phillips Pet. Co. No. 28 Santa Fe, C NE SE Sec. 33-17-35. C.&P.
Repollo Oil Co. No. 2 State, Lse. 197, SE NE SE Sec. 6-17-34. Drlg. 4,660 ft.
Shell Pet. Corp. No. 1-C State, C NE SE Sec. 24-17-34. T.D. 4,733 ft.; C.O. 4,650 ft.
Shell Pet. Corp. No. 1-V State, C NE SE Sec. 21-17-35. Rng. tbg. 4,680 ft.
Standard Oil Co. of Texas No. 2 State, Lse. 6, C NE SW Sec. 34-17-35. Drk.
Standard Oil Co. of Texas No. 3 State, Lse. 3, C NE NW Sec. 32-17s-35. W.O.C. 4,200 ft.
Stanolind O. & G. Co. No. 2 State, C SE NW Sec. 1-17-36. Drlg. 2,079 ft.
Texas Co. No. 1-T State, C SE NE Sec. 25-17-34. T.D. 4,725 ft.; R.U. and S.D.
Twin Oil Corp. No. 1-D State, C SW NE Sec. 30-17-35. T.D. 4,700 ft.; pmp. 5½ B.O.P.H.
Fullerton Oil Co. No. 1-A Walker, C SW NW Sec. 18-18-32. Drlg. 2,880 ft.
Phillips Pet. Co. No. 16 Santa Fe, C NW SW Sec. 5-18-35. T.D. 4,750 ft.; C.O. 4,707 ft.
P. B. English No. 1 Miller, C NE SE Sec. 18-19-32 (wildcat). Drlg. 305 ft.
Great Western Prod. Co. No. 2 Bordages, NE SE NW Sec. 33-19-37. Drlg. 3,810 ft.
Shell Pet. Corp. No. 2 Foster, SE SW SE Sec. 34-19-36. T.D. 3,953 ft.; retreat and F. 181 B.O. and 94 B.W. in 15 hrs.
Continental Oil Co. No. 2 Britt B-10, C W½ NW SW Sec. 10-20-37. Drlg. 3,793 ft.
Continental Oil Co. No. 4 Britt B-15, NW SW SW Sec. 15-20-37. T.D. 3,853 ft.; F. 27 B.O.P.H.; 4,000,000 cu. ft. gas.
Continental Oil Co. No. 3 Sanderson B-14, C E½ SE SW Sec. 14-20-36. T.D. 3,840 ft.; F. 60 B.O.P.H. for 3 hrs.
Continental Oil Co. No. 4 Sanderson B-14, NE SW NW Sec. 14-20-36. C.&P.
J. M. Rush No. 4 State A-20, NW SE SE Sec. 20-20-37. Loc.
Texas Co. No. 16 Lieu-Lands, C NE SW Sec. 20-20-37. T.D. 3,850 ft.; F. 42 B.O.P.D.
Texas Co. No. 17 Lieu-Lands, NW NW SW Sec. 19-20-37. Loc.
Aloco Oil Co. No. 1 Carson, C SW SE Sec. 28-21-37. T.D. 3,560 ft.; P.B. 3,150 ft.; W.O.C.
Bryant-Drilexco No. 2 State, SE SW SE Sec. 12-21-35. Drlg. 3,535 ft.
Danglade & Clower No. 1 Owen, NW SW SW Sec. 34-21-37. R.U. mch.
Gulf Oil Corp. No. 7 McCormack, C NE SE Sec. 32-21-37. Drlg. 3,503 ft.
Gulf Oil Corp. No. 2-B Mattern, C SE NE Sec. 31-2-37. Drlg. 1,500 ft.
Gulf Oil Corp. No. 4 Ramsey, C SE SE Sec. 35-21-36. Drlg. 3,500 ft.
Magnolia Pet. Co. No. 1 Marshall, C SE NW Sec. 34-21-37. Drlg. 600 ft.
Francis C. Wilson No. 3 State, NW SE NE Sec. 7-21-35. T.D. 3,868 ft.; acdz. and testg.
Stanolind O. & G. Co. No. 4 Hill, C SW NE Sec. 6-21-37. Drlg. 2,736 ft.
J. C. Clower No. 1-B Manda, NE NE NW Sec. 28-22-37. T.D. 3,681 ft.; F. 35 B.O. in 15 hrs.
Danglade & Clower No. 1-B Glier, C SE NW Sec. 33-22-37. T.D. 3,691 ft.; B. est. 25-40 B.O.P.D.
Continental Oil Co. No. 1 State F-1A, C W½ SE NE Sec. 1-22-35. Drlg. 3,619 ft.
Continental Oil Co. No. 5 State J-2, C SE SE Sec. 2-22-36. Loc.
Continental Oil Co. No. 5 State E-17, C W½ NW SW Sec. 17-22-36. Drlg. 3,349 ft.
Gulf Oil Corp. No. 3-E Mattern, C NW NW Sec. 12-22-36. Drlg. 760 ft.
Olean Pet. Co. No. 2 Farrell, SW SE SE Sec. 22-22-37. T.D. 3,757 ft.; S.D.O.
Skelly Oil Co. No. 7 Baker, C NW NE Sec. 27-22-37. Drlg. 440 ft.
Skelly Oil Co. No. 5 Simms, C NW SE Sec. 33-22-37. Drlg. 1,010 ft.
Texas Co. No. 2-B Fally, C SE SW Sec. 8-22-37. T.D. 3,720 ft.; S.&F. 40 B.O.P.D.
Texas Pacific Coal & Oil Co. No. 14-A State, C NW NE Sec. 11-22-36. S.D. rprs. 2,700 ft.
Walter Donnelly No. 1 Davis, C SE NW Sec. 33-23-37. T.D. 3,600 ft.; F. 11 B.O.P.D.; tstg.
Great Western Prod. No. 2-B Leonard, C NW NW Sec. 32-23-37. C.&P.
Continental Oil Co. No. 4 Jack A-20, C SW NE Sec. 20-24-27. Drlg. 3,185 ft.
Continental Oil Co. No. 2 Jack B-37, C SW NE Sec. 27-24-37. Drlg. 2,700 ft.
Humble O. & R. No. 4 Williams, C NW NW Sec. 34-24-37. Drk.
Parker Drlg. Co. No. 3 Erwin, C W½ NE SW Sec. 35-24-37. T.D. 3,460 ft.; F. 10 B.O. in 8 hrs.; est. 3,000,000 cu. ft. gas.
Phillips and Pure No. 5 Woolworth, C SW SE Sec. 33-24-37. C.&P.
Phillips and Pure No. 6 Woolworth, C NE NE Sec. 33-24-37. Drlg. 3,473 ft.
Schermerhorn Oil Co. No. 5 Woolworth, NW SW NE Sec. 28-24-37. Drlg. 3,116 ft.
Schermerhorn Oil Co. No. 6 Woolworth, C SW SE Sec. 28-24-37. Drlg. 85 ft.
Sam Weiner No. 2 Woolworth, SW NW SW Sec. 33-24-37. T.D. 3,565 ft.; to test.
Weir Drlg. Co. No. 3 Woolworth, NE SW SW Sec. 28-24-37. Drlg. 2,945 ft.
Amerada Pet. Co. No. 1-B Stuart, NW SE NE Sec. 22-25-37. W.O.C. 1,119 ft.
Anderson & Prichard No. 5 Wells, C NW NE Sec. 5-25-37. Loc.
Anderson & Prichard No. 1 Woolworth, NW NE NE Sec. 17-25-37. M.I. drk.
Culbertson & Irwin No. 3 Henry, SW SW SW Sec. 26-25-37. Drlg. 1,055 ft.
Gulf Oil Corp. No. 6 Stuart, C NW NW Sec. 11-25-37. Drlg. 3,405 ft.
Italo Pet. Corp. No. 1 Carlson, SW NE NW Sec. 26-25-37. Drk.
Italo Pet. Corp. No. 1 Indian B-4, NE NW NW Sec. 4-25-37. R.U.R.
Italo Pet. Corp. No. 1 Indian Pet. Corp. B-5, NW NE NE Sec. 5-25-37. T.D. 3,556 ft.; F. 4 B.O.P.H.
Italo Pet. Corp. No. 2 Indian Pet. Corp. B-5, NE SE NE Sec. 5-25-37. Rng. tbg. 3,548 ft.
Italo Pet. Corp. No. 2-B N. M. Pet., SE SW NW Sec. 4-25-37. Loc.
Phillips and Pure No. 2 Woolworth, C SE NE Sec. 6-25-37. C.&P.
Richmond Drlg. Co. No. 2-A State, C SW SW Sec. 2-25-37. Drlg. 2,325 ft.
Sam Weiner No. 3 Smith, C N½ NE SE Sec. 4-25-37. T.D. 3,506 ft.; C.O.; F. by heads.

Eddy County

Allen, Fair & Pope No. 1 Snowden, SE NE SE Sec. 36-17-29. T.D. 522 ft.; rng. csg.
Aston & Fair, Inc., No. 1 Hudson, C NE NE Sec. 18-17-31. Drlg. 2,335 ft.; S.O. 1,945-70 ft.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE Sec. 17-17-31. T.D. 3,530 ft.; F. 32 B.O.P.D.; may shoot.
Hammond & Sons No. 1 Ployhar-State, SW SW SE Sec. 16-17-28. Drlg. 1,430 ft.
J. O. and J. H. Hammond No. 1 Paris, NE NW NW Sec. 5-17-29. S.D.O. 25 ft.
English & Harmon No. 1 Stogner, C NW SE Sec. 31-17-31. T.D. 4,103 ft.; W.O.C.
P. B. English No. 1 Saunders, SE SE SE Sec. 13-17-27. T.D. 535 ft.; B. 1 B.O.P.H.; tstg.
Flint Prod. Co. No. 1-L Dexter, SE NW SE Sec. 15-17-30. T.D. 3,466 ft.; S. 30 B.O.P.D.; W.O.O.
Jim E. Hughes No. 2 Brooks, NE SW NE Sec. 19-17-28. Spd. and S.D. rprs.
F. G. Keyes No. 3 Red Gulch, NW NW NE Sec. 16-17-28. Drlg. 1,625 ft.
Ohio Oil Co. No. 4 State-McCallister, Sec. 25-17-34. W.O.C. 510 ft.
C. S. Powell No. 1 Smith, NW NW NE Sec. 6-17-29. T.D. 2,485 ft.; est. 500,000 cu. ft. gas.
Red Lake Oil Co. No. 1 State, NE NE SE Sec. 20-17-28. T.D. 1,970 ft.; shot and C.O. at 1,970 ft.
H. J. Steinberger No. 1 Hastie, SE NE SW Sec. 18-17-38. T.D. 555 ft.; R.U. to pump.
Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. Drlg. 1,400 ft.
Barney Cockburn No. 1 State-Graham, C NE NE Sec. 16-18-31. Drk.
Farmer & Tallmadge No. 1 Hubbell, NE SW Sec. 4-18-25. T.D. 400 ft.; to sdtrk. bit.
Franklin Pet. Corp. No. 1 Ballard, NE NE SE Sec. 1-18-29. Drlg. 2,425 ft.
Franklin Pet. Corp. No. 1 Canfield, C NW NW Sec. 7-18-30. C.&P.
Green Bay Oil Co. No. 1-A Johnson, C SE SE Sec. 11-18-31. T.D. 3,562 ft.; B. est. 10 B.O.P.H.
Harvey E. Yates No. 1 Travis, NE SE SE Sec. 6-18-29. Drlg. 2,085 ft.
Carper Drlg. Co. No. 1 Quillen, C NW NE Sec. 12-19-31. S.D.O. 2,765 ft.
Geo. E. Robb No. 1 Cannon, C SW SE Sec. 4-19-30. T.D. 210 ft.; S.D.O.
Geo. E. Robb No. 1 Vandagriff, SW NE Sec. 6-19-31. T.D. 800 ft.; S.D.O.
R. C. Underwood No. 1 Quillen-Bruce, NE NE SE Sec. 4-19-31. T.D. 3,001 ft.; to drill plug.
Martin Yates, Jr., No. 1 Bowers, SW SE SE Sec. 31-19-27. T.D. 1,180 ft.; est. 25-40 B.O.P.D.; tstg.
Trojan Oil Co. No. 1 Grant, SW SW NE Sec. 33-20s-25e. S.D.O. 408 ft.
C. F. Ingram No. 1 Page, NE NE SW Sec. 15-21-28. T.D. 2,978 ft.; fsg.

Barnett Oil Dev. Co. No. 1 King, C NW SE Sec. 23-26-30. Drlg. 1,865 ft.

Chaves County

Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. W.O.C. 2,875 ft.
E. J. Fisher No. 1 Foster, C NW NW Sec. 7-15-26. T.D. 1,281 ft.; S.D.O.
New, Russell & Wood No. 1 Sterrett (wildcat), NW SE NW Sec. 29-11-25. R.U. mch.
Tarkenton Bros. No. 1 Peters, SE SE SE Sec. 33-11-25. R.U.R.
Western Minerals, Inc., No. 1 Dow (wildcat), C SW NW Sec. 27-10-30. Loc.

De Baca County

N. E. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 620 ft.; S.D. reprs.
James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 680 ft.; S.D.O.

Roosevelt County

Shell Pet. Corp. No. 1 Harwood, C S½ SE SE Sec. 27-7s-35e. Drlg. 5,947 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarito, Sec. 22-9n-1e. S.D. 1,100 ft.

San Juan County

Goodrun No. 3 fee, CEL SW NE Sec. 23-29n-11w. T.D. 750 ft.; tstg. at 698-719 ft.
Kutz Deep Test, Inc., No. 1 Govt., C NW NW Sec. 28-28n-10w. S.D. 400 ft. for bond.

San Miguel County

Southwest Drlg., Inc., No. 1 Conchas, NW NE Sec. 34-17n-21e. T.D. 1,450 ft. installing Diesel power.

Valencia County

C. A. Broeber et al No. 1 Fuqua, NE NE Sec. 19-5n-3e. T.D. 850 ft.; tstg. S.O.
Joiner Oil Corp. No. 1 San Clemente, C NE SE Sec. 23-7n-1e. Drlg. 3,750 ft.

COLORADO

The Colorado State Highway Department will use between 10,000,000 and 11,000,000 gallons of road oil for its 1939 surfacing requirements. Bids will be received on March 16 for first order of approximately 1,020,000 gallons. Bids will be opened at the highway department's testing laboratory at 1370 Krameria Street, Denver, and will be supervised by Leon E. Lavington, state purchasing agent. At least 15 companies are expected to submit bids.

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE Sec. 18-33n 1e. S.D. below 800 ft.

Boulder County

Reynolds & Roher No. 1 Thomas, SW SW Sec. 17-1n 70w. Drlg. 1,000 ft. in 8-in. hole.

La Plata County

N. Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w Drlg. 2,315 ft. in blk. L.; top 2,307 ft.

Moffat County

Mountain Fuel Supply Co. No. 1 Wilson, NE NW NE Sec. 22-12n-100. T.D. 2,240 ft.; cmtd. off gas; W.O.C.
C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. T.D. 1,145 ft.; fsg.; U.R. lug.
Mackinnie Oil & Drlg. Co. No. 1 Coles, SW SW SE Sec. 1-3n-92w. S.D. 3,075 ft.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NE Sec. 31-36n-17w. T.D. 4,947 ft.; fsg. bit.

Park County

South Park Oil Co. No. 1 Leman, NE NE SE Sec. 34-11s-75w. Drlg. 6,802 ft.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW Sec. 31-21s-44w. Drlg. sli. L. 5,597 ft.; T. 5,580 ft.

Pueblo County

C. E. Puckett No. 1 Barber, NW Sec. 35-21s-66w. S.D. 870 ft. for csg.
Eden O. & G. Co. No. 1 Horse Creek, SW SE Sec. 29-19s-64w. T.D. 2,060 ft.; trying to free pipe.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. S.D. 3,645 ft. until spring.

WYOMING

Albany County

G. R. McConnell No. 2 Govt., CNL NE SW Sec. 7-15n-75w. Drlg. 311 ft.

Big Horn County

Clifford S. Johnson No. 1 Johnson, CEL NW NW Sec. 24-51n-93w. Drlg. 460 ft.
Joan Oil Co. No. 1 Howell, NE NW NE Sec. 32-55n-97w. S.D. 2,718 ft.

Carbon County

The Ohio Oil Co.-California Co. No. 7 Union Pacific, CSL NE SW Section 23-21n-79w, which establishes the productive limits of the Big Medicine Bow field on the northwest, was plugged and abandoned at 5,836 feet, total depth. It had no shows in the Sundance sand. It plugged back and tested water in the Dakota at 5,220-70 feet and then tested the Frontier at 4,480-4,580 feet without results. Location is half a mile west of No. 3 Union Pacific, a producer in the upper Sundance, and northwest of No. 6 Union Pacific, a small gas well.

Sinclair-Wyo. Oil Co. No. 2-A Mahoney Unit, C SW NE Sec. 34-26n-88w. Drlg. 3,520 ft.

Producers Oil Co. No. 1 Lake Valley, 200 ft. CEL, Sec. 14-20n-88w. S.D. 1,916 ft.

Fremont County

H. Kenyon Burch No. 9 Tribal, C NW NW Sec. 27-3n-1w. Drlg. 1,000 ft.; D.D. from 730 ft.

Hot Springs County

The U. S. Land Office at Cheyenne will receive bids on March 14 for oil and gas leases under the provisions of the Act of August 21, 1935, amending the leasing act, on two units in the Hamilton Dome field. Unit No. 1 comprising the SE SE Section 11 and SW NE Section 13-44n-98w, and Unit No. 2 comprising Lot 4, Section 19-44-97 and S half NE SE NW Section 24-44-98, offset acreage brought into production in recent completions by the Italo Petroleum Corp.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. 1,355 ft.

Natrona County

Richland Corp. No. 1 State, SW NW Sec. 36-36n-81w. R.U.C.T.
General Pet. Corp. No. 2 State, NW SE NE Sec. 16-35n-77w. Drk.; foundations run.
General Pet. Corp. No. 1 State, NW NE SE Sec. 16-35n-77w. Drlg. 8,337 ft. in basal Morrison; Lakota at 8,-152-95 ft. was hd. and tight; good sat. at 8,107-14 ft.

Niobrara County

The Ohio Oil Co. No. 1 Leo-O.P.C.-7, NW NW SE Section 35-36n-65w, the most easterly Leo sand well in Lance Creek, which was completed at 5,641 feet in 1937 for 13 bbls. of oil and 50 bbls. of water per day, was deepened to 5,673 feet, 2 feet in the second Leo sand, in which it found water. It will plug back and test the Sundance sand before abandoning.

The Argo Oil Co. No. 9-A Elliott, NW SE SE Section 5-35n-65w, an edge well in the Sundance pool, was completed at 4,022 feet, 4 feet in the red beds, for 598 bbls. the first 24 hours from the Sundance. The 7-inch is at 3,931 feet and ground elevation 4,469 feet. Testing and working over increased production from 70 bbls. per day to the figure given for the final test.

The Adams Oil & Gas Co.-Felmont Corp. No. 1 Adams flowed 10 bbls. after a shot with 20 quarts and is rigging up pump for a test.

One new operation was reported in the Ohio Oil Co. No. 11 Putnam, an inside well for Sundance and Leo sand horizons.

Ohio Oil Co. No. 11 Putnam, SE SE SW Sec. 33-36n-65w. Loc.
Continental Oil Co. No. 2 E. Rohlff, NW SE NW Sec. 32-36n-65w. R.U.R.
Minnelusa Oil Corp. No. 2 Joss, SE NE SW Sec. 6-35n-65w. T.D. 3,989 ft.; R.U.R.; O.W.D.D.
Minnelusa Oil Corp. No. 1 H. & M.-5, NW NE SE Sec. 7-35n-65w. B.R.
Argo Oil Co. No. 3 Ford, SW SW NW Sec. 33-36n-65w. Drlg. 4,531 ft.
Ohio Oil Co. No. 5 Rohlff, 100 ft. E of C E½ Sec. 32-36n-65w. Drlg. 2,587 ft.
Continental Oil Co. No. 14 Tom Bell, C NW SW Sec. 34-36n-65w. T.D. 3,966 ft.; rng. tbg. to test; S.O. at 3,941 ft.
Fall River Roy. & Prod. Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. T.D. 1,000 ft.; fsg. bailer.

Sublette County

Texas Co.-Frontier Pet. Co. No. 1 Govt. Unit, SE SE SW Sec. 1-28n-114w. T.D. 6,247 ft.; drlg. out cmt.
Yellowstone Oil Co. No. 1 Henry Budd, C SE SE Sec. 6-30n-112w. Cmtd. 13⅜-in. at 500 ft.; drlg. ahead.

Sweetwater County

The Sinclair-Wyoming Oil Co. No. 81, SW NW NW Section 11-26n-90w, Lost Soldier field, was completed as a producer in the Sundance at 2,034 feet after plugging back from 2,064 feet to shut off bottom water, for 50 bbls. of oil in 12 hours. Top of sand was at 1,997 feet.

Sinclair-Wyo. Oil Co. No. 82, NE SW SW Sec. 11-26n-90w. Drlg. 1,911 ft.; T. Sundance form. 1,863 ft.

Uinta County

Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. Drlg. 680 ft.

Weston County

T. R. Ragland and Osage Trust Co. No. 3 Government, C NW SW Section 31-42n-60w, Dewey dome, was deepened to 2,535 feet in the Leo sand, top at 2,465 feet, without improving conditions and will plug and abandon. It swabbed about 25 bbls. of oil from the top of the sand at 2,465-2,505 feet. Rig will be moved farther west and another test made. Location is 1½ miles north of the discovery, which made 25 bbls. per day.

Lem Johnston No. 1, NW SW Sec. 24-44n-63w. T.D. 1,-700 ft.; rng. 10-in. to 1,485 ft.

MONTANA

Glacier County

Morton-Cloutier No. 1 Hagan, C SE SE Sec. 5-31n-7w. Spd. to 15 ft.; S.D. to comp. R.U.; (first report; test on Hagan str. SW of Cut Bank field).

(Continued on Page 89)

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Eastern Field Report

By STAFF CORRESPONDENT

New Penn's Test in Fayette County Shows Gas in Chert

PITTSBURGH, Pa., Feb. 27.—The test of the New Penn Development Co., William E. Snee and others on the Indian Creek Coal & Coke Co. lease, William Johnson warrant, in South Union Township, Fayette County, Pennsylvania, is drilling at 7,005 feet with a gauge of 620,000 cu. ft. of gas a day coming from the cherty zone of the Onondaga limestone. The depth is 82 feet in the chert without passing through the larger gas pays found in the Summit Hotel No. 2 which was bottomed at that depth in the cherty zone with a gauge of over 3,500,000 cu. ft. a day. It is believed from the increased Marcellus interval in the new test that the structure may be dipping, and that the tools are passing through at an angle which would account for the increase in thickness. From the test on the Piedmont Coal Co. there should be still over 100 feet of Onondaga yet to be explored.

On this structure north of Route 40 in North Union Township, Wasson & Co. are installing a new line to resume drilling the test on the J. H. Sorg farm, which has reached 6,965 feet, or 40 feet in the cherty zone, with a showing of gas from the first pay. So far the lime is drilling easier in this test than in the wells to the south.

In Southeast Ohio, only three operations were reported. On Pratts Fork in Section 13, Lodi Township, Athens County, Gross, McCune No. 5 Sapp was dry in the Mitchell sand to 469 feet and was abandoned.

In Morgan County, Pure Oil Co. completed No. 1 R. E. Hughes, in Section 33, York Township, in Berea sand at 1,183 feet. It showed about 1 bbl. a day, but the well is being used for repressuring.

In Washington County, J. F. Graham drilled a dry hole on the John Mendenhall farm on Sackett Run in Section 27, Ludlow Township, through the Berea grit to 1,965 feet.

SOUTHWEST PENNSYLVANIA

In North Strabane Township, Washington County, Pennsylvania, Beedle, DeBone and others completed the test on the J. C. McNary farm at 2,756 feet, in Elizabeth sand with 100,000 cu. ft. a day coming from the Fifth sand at 2,520 feet.

In Franklin Township, Greene County, Gartland Oil Co. completed deepening the test on the J. L. Donley farm at 3,014 feet. The total gauge was 79,700 cu. ft. a day with a rock pressure of 675 pounds. In this township, J. B. Myers and others are drilling at 1,538 feet on the Sallie Norris farm, with the gas sand at 1,370 feet and 174,000 cu. ft. of gas at 1,410 feet, which exhausted itself.

In Monongahela Township, Greene County, Brummage and others have reached 2,090 feet, deepening the test on the S. G. Durr farm with the Big Injun sand at 1,803-2,030 feet and 95,000 cu. ft. of gas at 1,928 feet.

In Morris Township, Greene County, O. I. Dille has reached 815 feet in the second test on the Ellsworth Beckham farm. C. H. McVay and others are down 2,840 feet on the Elmas Laughman farm. Burleigh Wright is ready to start the test on the Strawn Heirs farm.

Little work is in progress in Washington County with most of the tests awaiting better weather. In Allegheny County, Young Brothers are drilling at 2,165 feet in the test on the James Sturgeon farm.

Some new activity has started in Fayette County in the Injun sand gas pool near Uniontown both north and south of Route 40. The Nollem Oil & Gas Co. has started drilling the test on the Jesse Frost farm and is moving in the rig on the Andy Manyak farm. Both are in Menallen Township.

Deep Tests

The test of the Peoples Natural Gas Co. scheduled for the Oriskany sand on the Lowry Martin farm in Wayne Township, Armstrong County, is drilling at 900 feet with 11-inch casing set at 753 feet and a 10-inch hole being carried.

On Chestnut Ridge in Springhill Township, Fayette County, the L. J. Houze Convex Glass Co. is still fishing in the test on the Paul Dunham farm. All but about 400 feet of line was lost in the hole with the tools of which 1,350 feet of the line has been recovered. The total depth was 7,625 feet.

WEST VIRGINIA

One small producer was completed in West Virginia during the week. In Ritchie County, Mole Hill Oil & Gas Co. completed the second test on the W. H. and D. M. Bradford farm in Clay district in the Cow Run sand at 1,067 feet and it is a 2-bbl. pumper.

In Gilmer County, Pittsburgh & West Virginia Gas Co. completed No. 7654 on the Alexander Lyons farm in Glenville district at 1,772 feet with Big Injun sand at 1,654-1,719 feet and 93,000 cu. ft. of gas at 1,703-06 feet.

In Pleasants County, H. W. Riggs and others completed No. 3 on the C. P. and Delia Simonton farm in Lafayette district in the Maxton sand at a depth of 1,821 feet. It is a gas well gauging 400,000 cu. ft. a day.

In Church district, Wetzel County, Null and Moorhead completed No. 3 Jackson Hostutler Heirs farm at 3,448 feet with the Pittsburgh Coal at 1,168 feet: Thirty-foot sand at 3,200 feet; gas at 3,202 feet which gauged initially 175,000 cu. ft. a day.

In Proctor district, Wetzel County, Hughes and Swisher completed a test on the Wade and Canon town lots in Proctor, in the Cow Run sand at 543 feet and it is a gas well gauging 200,000 cu. ft. a day. In the same town, A. E. Lamp completed a gasser on the Ida Butler lot at 540 feet, gauging 100,000 cu. ft. a day. In this district, J. D. Smith and others drilled a test on the J. D. Montgomery farm through the Gordon sand to 3,030 feet and it was dry in all formations.

Oriskany Gas Field

One new well was completed in the Oriskany gas field in Kanawha County. In Poca district, the South Penn Oil Co. test on the J. A. Monk farm was completed at 5,128 feet with the Corniferous lime topped at 4,993 feet; Oriskany 5,104 feet, and a final gauge, after a shot, 2,713,000 cu. ft. a day. The rock pressure was 1,560 pounds 48 hours after the shot.

In this district the final gauge of Godfrey L. Cabot, Inc., in the test on the Putnam company leases was 4,023,000 cu. ft. a day with the Corniferous lime at 4,875 feet; Oriskany 4,989 feet; total depth 5,021 feet.

In Poca district, the United Fuel Gas Co. topped the Corniferous lime at 4,838 feet in No. 4812 J. A. Wines and others, and is drilling at 930 feet in No. 4769 O. R. Schmittauer; at 4,907 feet in No. 4768 John Wines; at 600 feet in No. 4814 W. F. Beane; at 5,029 feet in No. 4815 Mamie A. Ray; at 2,264 feet in No. 4817 W. M. Vance; fishing for bit at 4,848 feet in No. 4818 W. H. Fisher; drilling at 2,696 feet in No. 4822 W. F. Beane; at 4,390 feet in No. 4825 G. C. Patterson and others; at 1,810 feet in No. 4823 W. P. Tolbert and others; at 1,569 feet in No. 4826 Janey Gibson and others; at 1,732 feet in No. 4827 O. D. Price and others; at 1,710 feet in No. 4828 M. R. Mairs and others; building rig for No. 4830 C. O. Slater and others, and a road to No. 4831 B. C. Gillespie and others.

In this district, Godfrey L. Cabot, Inc., is drilling at 4,786 feet the Helen M. Hoge test and building road to the W. Holmes Morton second test. The West Virginia Gas Corp. has started drilling on the W. H. and T. E. Reese test. Columbian Carbon Co. has reached 2,385 feet in the L. M. Fields and others test, and in Elk district at 4,113 feet in the M. N. Landers and others test.

Outside Deep Tests

In the extension to the Kanawha Oriskany gas field in Jackson County, Everett Starcher and others are drilling at 3,740 feet on the R. R. Boggess farm, Ripley district. The Columbian Carbon Co. is drilling at 1,121 feet on the G. W. Lathey farm, 6 miles southwest of the town of Ripley. In Ravenswood district, Joe Rubin, N. P. Johnston and others shut down for casing at 2,253 feet and have resumed drilling in the deep test on the D. P. Curry farm.

New Work

In Calhoun County, the Hope Natural Gas Co. will deepen the No. 1 Solomon Holpp, Serial No. 6073, in Sheridan district. In Sherman district, H. S. Adams heirs are drilling in the Injun sand on the F. M. Wilmoth heirs farm. W. H. Bickel is down 1,620 feet in No. 2 Luerna Barr, and Gunn and others are at 1,500 feet in No. 1 Luerna Barr.

In Cabell County, Elkins Gas Co. is drilling at 3,000 feet in No. 1 Leonard Paugh. R. H. Adkins is rigging up No. 1 B. L. Perry. West Virginia Gas Corp. was drilling at 1,490 feet in No. 1 Claude Keyser. R. H. Adkins, trustee, at 1,250 feet in No. 1 U. G. Bledsoe; Wade Gas Co. at 1,690 feet in No. 1 Nelson Holton heirs, all in the McComas district. In Grant district, Big Two Mile Gas Co. is drilling at 1,130 feet on the W. W. Connor farm.

In Boone County, Owens-Illinois Glass Co. is drilling at 3,515 feet in No. 15 Peytonia Coal Land Co., and at 3,234 feet in No. 13 Bull Creek Coal & Land Co., in Peytonia district. In Washington district, Nelson Gas Co. is testing casing at 1,410 feet on the Francis Pauley and others lease.

In Gilmer County, L. E. and W. H. Mossor have reached 2,064 feet in the S. S. Riddle test in DeKalb district, and Whiting and McKnight are shut down testing the sand in the A. B. and J. D. Vannoy test at 1,976 feet.

In Kanawha County, Ajax Gas Co. made a location for No. 8 Clyde Anderson and others in Union district, elevation 811 feet. In Malden district, Ten Mile Oil & Gas Co. is drilling at 1,475 feet in No. 20 Margaret Y. Dickinson.

In Lewis County, Carnegie Natural Gas Co. will deepen No. 2 Emma J. B. Linger, in Freemans Creek district. In this district, Pittsburgh & West Virginia Gas Co. has a location for No. 3 L. C. Waugh 2,600 feet north of the B. J. Rinehart and others well which is producing 3 bbls. a day.

In Lincoln County, R. H. Adkins is down 1,600 feet on the T. C. Collins land in Carroll district. In Duval district, Kanawha Gas & Utilities Co. is down 2,500 feet in No. 2 Edward Davis. In Jefferson district, R. H. Adkins was drilling at 1,480 feet in the Osa Lovejoy test. In Union district, Woodall Gas Co. is rigging up No. 2 Ambrose Adkins.

In Mingo County, W. E. Burchett is shut down for a shot at 2,900 feet in the test on the B. F. Meade farm in Kermit district. In Putnam County, Smith & Ellison have reached 900 feet on the R. G. and M. Simms and other lease in Scott district.

In Pleasants County, Watson Oil & Gas Co. has a rig up for No. 11 F. M. Lamp in Lafayette district. Frank Ball is deepening the No. 1 L. E. Fleming, in McKim district, drilling at 1,895 feet.

In Ritchie County, Burge Drilling Co. made a location on the Clarence Lewis farm in Grant district, elevation 776.7 feet. In Murphy district, King Knob Gas Co. was drilling on the A. F. Kelley farm at 200 feet.

5,000-Barrel Well in Griffin Field; Numerous Extensions

By D. H. STORMONT

FORT WORTH, Tex., Feb. 27.—Possibility of a new pool in Hockley County together with field extensions in several areas, featured the week's development in the North Basin of West Texas. Extensions on three sides of the North Cowden pool; to the Dunes pool in Crane County and to the Fuhrman pool in Andrews County headed the development in the southern basin area.

The possibility of a new pool in Jack County and activity in Jones County's new Griffin pool held the attention in the West Central Texas district.

Possible 2½-mile northwest extension to the Dean pool, or a new area for eastern Cochran County was seen during the week at T. G. Shaw No. 1 Carrie Slaughter Dean, in League 94, Mills County School Lands. No. 1 Dean was reported to be swabbing about 12 bbls. of fluid hourly, half oil and half acid water, after treatment with 500 gallons, 1,000 gallons and 6,000 gallons of acid. Before swabbing the test had 1,000 feet of oil in the hole. Its depth is 4,981 feet, corrected by steel line measurement. The well is 1 mile south and a quarter mile west of George P. Livermore No. 1 Wright, a small discovery well, and 6 miles north and 2 miles west of Wiggins, Hyde & Lawson No. 1 Dean, a 100-bbl. discovery well 4 miles northwest of the Duggan pool.

A mile north of production in the Slaughter pool, Hockley County, Sid W. Richardson No. 1 A. E. Coe, Labor 53, League 40, Maverick County School Lands, was reported swabbing 20 bbls. of salty sulfur water per hour. The hole had not yet been cleaned of its oil load and operators were uncertain as to whether the water had been shut off in plugging back to 5,149 feet. The well previously had flowed 16 bbls. of oil hourly.

In Gaines County, a quarter-mile outpost has been staked to the two producers that extended the Seminole pool 4 miles to the northwest. The new location is Atlantic Refining Co. No. 1 Tippett, 660 feet out of the northeast corner of Section 266, Block G, W.T.R.R. Survey. The location is an offset to the Atlantic Refining Co. and Osage Drilling Co. No. 1 Tippett, second producer in the 4-mile extension area. Starting at once, the test will be contracted to 5,200 feet, or production.

Several important tests in Yoakum County attracted interest during the past week. Sinclair Prairie Oil Co. No. 1-A Kendrick, Section 825, indicating a quarter-mile east extension to the most eastern edge of production in the Denver pool, was drilling below 5,045 feet in lime, with 2,000 feet of oil in the hole.

Shell Petroleum Corp. No. 1 Waples-Platter Co., Section 616, a wildcat 2 miles northeast of the Bennett pool, was drilling at 4,322 feet in anhydrite.

Texas Pacific Coal & Oil Co. No. 1 Brownfield, Section 802, wildcat test 1½ miles north of the eastern portion of the Denver pool and almost mid-way between the Denver and the Bennett pools, has cemented 7-inch casing on bottom at 4,590 feet in lime.

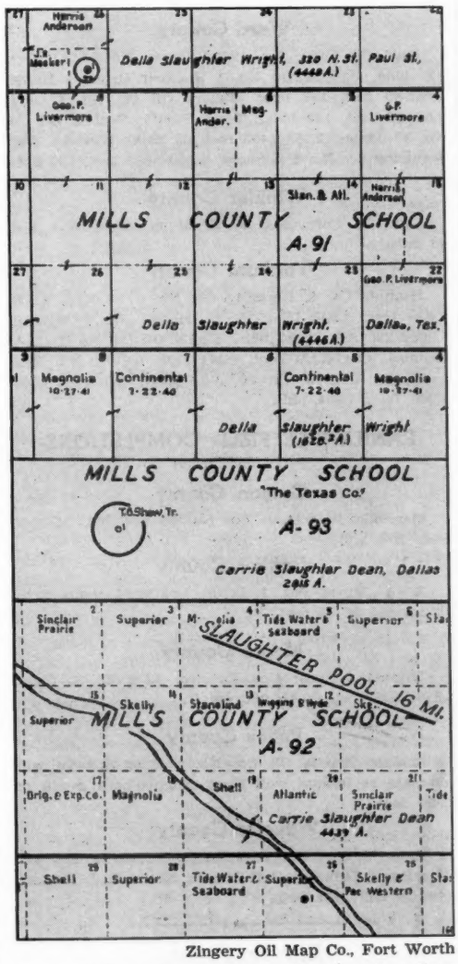
Southern Basin Area

Extensions were seen on three sides of the North Cowden pool in Ector County. Topping pay at 4,077 feet and filling 500 feet with oil in 12 hours, Cities Service Oil Co. No. 1 W. H. Rhodes, Section 24, Block 43, T.&P. Survey, indicated a half-mile spread to the extreme southern end of production in the pool. The crew was drilling ahead below 4,097 feet. Three-fourths of a mile to the west of production on the north end of the pool, Sinclair Prairie Oil Co. No. 1 Fay Holt, Section 1, Block A, P.S.L. Survey, found a split in the 7-inch casing at 830 feet, and is waiting for cement to set after squeezing it off. Texas Pacific Coal & Oil Co. No. 1 Holt, Section 19, Block 43, T.&P. Survey, assuring a one-half mile east extension to the northern part of the pool, was swabbing to test after filling 2,800 feet with oil at a total depth of 4,476 feet.

Three-fourths of a mile northwest of the discovery well in the Dunes pool of eastern Crane County, Wasomes Oil Co. No. 1 University, Section 8, Block 30, flowed 81 bbls. of oil in 14 hours after being shot with 650 quarts from 3,183 feet to 3,346 feet, total depth.

A quarter-mile west extension for the Fuhrman pool in southern Andrews County was assured at the Barnsdall Oil Co. No. 7 Ford, Section 20, Block 42-A. P.S.L. Survey. The well was reported flowing at the rate of 10 bbls. hourly after initial treatment with 1,000 gallons of acid from 4,308 feet to 4,458 feet, total depth. It is a one-fourth mile north of the same company's No. 6 Ford, completed recently for 1,475 bbls. of oil daily.

In Pecos County, approximately midway between the Masterson and the Pecos Valley pools, Leidecker & Cain staked a wildcat location on acreage farmed out from the Texas Co. The operators located No. 1 Lehn 330 feet out of the east corner of Section 71, Block 10, H.&G.N. Survey. Also in Pecos County, catastrophe hit a wildcat being drilled by Stanley A. Thompson of Fort Worth when part of the rig was destroyed by fire. The fire halted operations indefinitely on this well which has been drilling off and on for some three years. It is bottomed at 7,352 feet, plugged-back depth, where it had been given a 220-quart shot. Pipe collapsed from the shot, and the operators had been attempting to drill around the trouble and continue deeper.



Zingery Oil Map Co., Fort Worth

T. G. Shaw, Trustee, No. 1 Carrie Slaughter Dean is indicating a new pool or a major extension to the Dean pool in Cochran County in the North basin area of West Texas

WEST CENTRAL TEXAS

The possibility of a new pool in Jack County and the completion of a 5,000-bbl. well in Jones County's rapidly developing Griffin pool led the week's results in the West Central Texas area.

Jack County's most closely-watched wildcat and the only active deep test in the area, Pitzer & West No. 1 Fred Warren lands, north of Jermyn, filled 700 feet with oil in eight hours from 52 feet of saturation in lime topped at 4,365 feet. Operators plan to deepen a few feet, possibly to 4,000 feet, after which they will acidize and attempt completion. Location is in Section 2784, T.E.L. Survey, a west offset to a wildcat drilled by Cosden Oil Co. in 1919 in the Stewart lands which found saturation in drilling to 4,557 feet. The well is about 10 miles north of the Bryson pool.

In Jones County, the third record oil well for the new Griffin pool furthers the expectations that the area will be one of the major discoveries of recent years in West Central Texas. The new producer is Bert Fields No. 2 Taylor, northeast side of the pool, and has set a record for the field with a potential of 5,040 bbls. of oil daily. The two other large wells in the field are the same operator's No. 1 Taylor which gauged 4,860 bbls. per day and the Iron Mountain Oil Co. No. 2 Taylor which made 3,744 bbls. daily. Fields is preparing to start No. 3 Taylor, a location north of the new completion, and in Section 199, B.B.B.&C. Survey.

Possible extension of the pool nearly a quarter of a mile to the south was seen as Dee Humphrey No. 1 Smith found the Palo Pinto lime pay at 3,224 feet and is setting casing for a test. It is in the NW cor. S half SW Section 199, B.B.B.&C. Survey.

A new Noodle Creek lime pool for Jones County was indicated at Ralph R. Carroll No. 1 G. Herndon, a wildcat 15 miles west of Anson and 4 miles west of the two-well Chittenden pool. The well, located in the northeast corner of the Herndon tract, Subdivision 3, League 359, Goliad County School Lands, cored saturated lime from 2,650 feet to 2,677 feet, where the crew halted drilling to run casing and test.

Adding to Jones County's rapidly increasing list of wildcats, A. B. Bissey staked No. 1 Mary Spurrier, and is preparing to start immediately. Location is in Subdivision 1 of the Steffens subdivision of the Montgomery Ranch in the W. C. Walker Survey. It is northwest of the N. H. Martin No. 1 Spurrier which was drilled last year and produced for a time, then was plugged.

Forest Development Co. is considering a second wildcat on its Taylor County block after abandoning No. 1 Anderson last week at a total depth of 3,568 feet. The well had tested 20 bbls. of oil with 100 bbls. of water in five hours. It was started as a 4,800-foot test. Location was in Section 8, L.A.L. Survey.

WEST TEXAS FIELD COMPLETIONS
(24-hour tests)

Andrews County

Anderson & Prichard No. 3 W. F. Cowden, 4,140-

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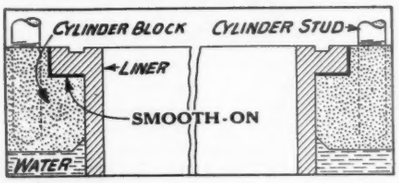

A 400-HP. DIESEL engine operated constantly for eleven years with such bad water in the cooling jackets that the settings of the liners forming the six 15-in. x 18-in. cylinders rusted out and water leaked all over the outside of the cylinder block.

Restoration of safe and efficient operation by replacement of the cylinder block was out of question as the block is 11 ft. long and weighs 10 tons. Even reboring and insertion of new oversize liners would have cost $230.00 per cylinder, and further weakened the block. To simplify an otherwise tough problem, the engineer mixed about 10 lb. of Smooth-On No. 3 and Smooth-On No. 1 into a soft putty, and, as shown in the diagram, reset the old liners with this mixture filled into the voids formed by corrosion. The finished repair made in July, 1937, was given 24 hours for the Smooth-On to harden and expand. The liners, in daily service ever since, have stayed in place perfectly with thorough water-tightness at all joints. The total material expense was about $4.00 for the Smooth-On, and the labor involved was a minimum.

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4,253 feet, 1,130 bbls. Sinclair Prairie Oil Co. No. 4 E. Cowden, 4,179-4,214 feet, 877 bbls.

Crane County

Humble Oil & Refining Co. No. 24 Tubbs, 4,296-4,430 feet, 2,336 bbls.

Crockett County

Gilcrease Oil Co. No. 4-16 University, 1,393-1,424 feet, 82 bbls.

Ector County

Broderick & Calvert No. 3-A Johnson, 4,180-4,280 feet, 1,224 bbls. Continental Oil Co. No. 1-8 Wright, dry and abandoned at 4,411 feet. Gulf Oil Corp. No. 157 Goldsmith, 4,156-4,201 feet, 94 bbls.; No. 158 Goldsmith, 4,100-4,221 feet, 1,132 bbls. Landreth Production Co. No. 5-0 Scharbauer, 4,163-4,205 feet, 612 bbls. Sinclair Prairie Oil Co. No. 3 Hugh Corrigan, 4,220-4,356 feet, 1,602 bbls. Texon Oil & Land No. 5 Midland National Bank, 4,220-4,380 feet, 2,975 bbls.

Howard County

R. J. Wallace No. 4 Bell, 2,630-2,850 feet, 258 bbls.

Nolan County

Union Oil & Mining Co. No. 1 J. D. Pepper, dry and abandoned at 6,011 feet.

Pecos County

Sahara Oil Co. No. 2 Shearer-Atlantic, 1,477-1,491 feet, 33 bbls. Thomasson Production No. 3 Pecos Valley, dry and abandoned at 1,712 feet. Union Oil & Mining Co. No. 3 Scharff & Blackmon, 1,671-1,775 feet, 95 bbls.

Upton County

Humble Oil & Refining Co. No. 29-B Ricker, 2,360-2,418 feet, 227 bbls. A. J. Rife No. 5 Baker-Republic, 2,222-62 feet, 1,140 bbls.

Ward County

Gulf Oil Corp. No. 104 O'Brien, 2,540-2,781 feet, 243 bbls. Ja-Chel Oil No. 1 Buckner Orphans Home, 2,055-80 feet, 187 bbls. Sahara Oil Co. No. 4 Dorr, 2,064-83 feet, 146 bbls. Texas Pacific Coal & Oil Co. No. 28 James, 2,205-2,405 feet, 63 bbls. Western Well Servicing Co. No. 1 Johnson, 1,930-2,081 feet, 135 bbls.

Winkler County

Gulf Oil Corp. No. 30 Keystone, 3,375-3,533 feet, 96 bbls.

Yoakum County

Humble Oil & Refining Co. No. 6 Wooten, 4,920-5,090 feet, 1,246 bbls. J. E. Mabee No. 4 Willard, 4,995-5,230 feet, 3,137 bbls. Skelly Oil Co. No. 1 C. A. Thomas, 4,947-5,151 feet, 1,254 bbls. (O.W.D.D.). Texas Pacific Coal & Oil Co. No. 18 R. Bennett, 5,088-5,260 feet, 1,204 bbls.

PANHANDLE FIELD COMPLETIONS

(24-hour tests)

Carson County

Magnolia Petroleum Co. No. 50 fee 244, 3,000-65 feet, 205 bbls.

Donley County

A. A. Mayes No. 1 G. F. Leathers, temporarily abandoned at 35 feet.

Moore County

Texoma Natural Gas Co. No. 12-M R. S. Coon, 2,870-3,325 feet, 20,416,000 cu. ft.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush Estate, will complete as helium well from plugged-back depth of 3,590 feet.

Wheeler County

Alma Oil Co. No. 1 East Johnson, 2,425-55 feet, 427 bbls. Smith Brothers Refining Co. No. 12 R. L. Harlan, 2,407-53 feet, 447 bbls.

Illinois Fields

(Continued from Page 67)

In Shelby County, D. J. Marshall and others No. 1 Harry Riley, C NE NE Section 9-11n-4e, derrick.

In Montgomery County, Fred DeMier No. 1, 150 feet from west and 410 feet from south lines of SE SW Section 31-9n-4w, spudded with a machine. It is a Niagara lime test.

In Fayette County, Carter Oil Co. No. 1 O. C. Wood, SE NE NW Section 11-8n-3e, location. Carter No. 1 Anna Sloan, NE SE SE Section 2-8n-3e, location. Ring and Underwood No. 1 Hopper, NW cor. NW NW SE Section 27-8n-3e, location.

In Effingham County, Whisenant & Trenchard No. 1 Henry Betram, 1,060 feet from north and 250 feet from west lines of NW quarter Section 23-8n-6e, derrick up, moving in rotary.

In Jasper County, Robey Drilling Co. and others No. 1 Whalen, SW SW SW Section 24-8n-9e, derrick.

In Fayette County, Carter Oil Co. No. 1 Darrell Durbin, SW NW NE Section 8-7n-3e, location. Shell Petroleum Corp. No. 1 Hugo, SW SE NE Section 20-7n-3e, moving in core drill. Carter Oil Co. No. 3 Owens, NW NE NW Section 20-7n-3e, location. H. Rosenthal No. 1 Kepner, 75 feet from south and 565 feet from east lines of SW NW Section 31-7n-3e, spudding. I. W. Lee No. 1 Molly Rush, 85 feet from south and 135 feet from west lines, SW NW Section 31-7n-3e, rotary derrick up. Ohio Oil Co. No. 1 C. M. Rush, NE NW SW Section 30-6n-3e, location.

In Clay County, Kingwood Oil Co. No. 1 Van Dyke, SE SE SW Section 11-5n-6e, location.

In Bond County, R. C. Martin and others No. 1 Willeford, SE NE SE Section 10-5n-4w, pits dug for a 2,000-foot test.

In Wabash County, Tide Water Associated Oil Co. No. 1 Cowling, SW SW SE Section 18-2s-13w of second principal meridian, a location.

In Washington County, Thompson Drilling Co. No. 1 Rosanski, NW NW SW Section 19-3s-1w, moving in core drill machine.

In Franklin County, M. G. Drilling Co. No. 1 Franklin County Realty Co., NE NE SE Section 26-6s-3e, set 10-inch pipe at 101 feet.

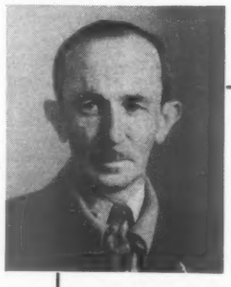
In Adams County, W. R. Wilson and others No. 1 Adams, 500 feet from north and 60 feet from west lines of SW NW Section 28-2n-7w of fourth principal meridian, rigging up machine.

In Effingham County, Kingwood Oil Co. No. 1 John Casey, NW NW NW Section 27-6n-4e, a location.

Many of the wildcat tests in the state are shut down by high water or delayed because of their inaccessibility on account of muddy roads. Once a loaded truck leaves the pavement it becomes a question of how far it will go before it is bogged down in the soft ground. Getting to well locations becomes a herculean job and as a result few of the outpost tests are actively operating.

In Champaign County, Sidney Oil & Gas Co. No. 1 Wendling, SW cor. SE NE SE Section 10-17n-10e, shut down at 1,000 feet.

In Bond County, Joe Kesl and others No. 1 Albert Meyer, NW NE NW Section 13-4n-2w, was shut down at 1,520 feet. Lindsay Brothers and others No. 1 Butler, NE NE SW Section 31-4n-2w, hole full of water with about 60 feet of oil on top from a formation at 2,456-58 feet, total depth, drilling ahead. Joe Kesl, Jr., No. 1 White, SW SE NW Section 17-5n-4w, spudded in and shut down temporarily. J. T. Elmore and others No. 1 J. J. Delinan, SW SE SW Section 13-6n-2w, shut down at 740 feet. Reisig & Quesenberry No. 1 Wilderman, NE NE NE Section 3-6n-3w, shut down at 1,340 feet. R. T. Anderson and others No. 1 John Novis, NW NW NW Section 16-6n-3w, shut down at 420 feet. Devonian Oil Co. No. 1 Ambuell, NE SW NW



Harry Hanbury

This is intended to clarify a matter of identical names. The man pictured here is Harry Hanbury, a producer of Shreveport, Louisiana, residing in California and has no connection, whatsoever, in business or blood relation with the Harry Hanbury of New York City and Tulsa, who is a buyer of oil royalties.

Section 22-6n-4w, shut down at 1,120 feet. Kesl and others No. 1 Satthoff, NE NE NW Section 12-6n-5w, drilling at 200 feet after setting 16-inch casing at 35 feet.

In Christian County, Oil Development Co. No. 1 Post, SE SW NW Section 1-14n-1w, base of Salem at 1,453 feet, shut down at 1,755 feet.

In Clark County, Harry Deem and others No. 1 Medsker, C NE NE Section 7-9n-12w of second principal meridian, rigged up and shut down.

In Clay County, Kroger and others No. 1 Chaney. NW SW SW Section 18-3n-7e, Menard at 2,205 feet, total depth 2,535 feet, moving in rotary tools. Richard Duncan No. 1 J. H. Liggett, SE NW SE Section 17-5n-5e, saturation at 2,356-73 feet, total depth, drilling cement after setting 5⅛-inch casing at 2,356 feet. Burnett and others No. 1 Smith, NE NW SE Section 21-5n-5e, McClosky at 2,474-77 feet, total depth 2,540 feet, shut down for orders. Kingwood Oil Co. and Gulf Refining Co. No. 1 Davis, NW SE SE Section 26-5n-5e, shut down at 2,378 feet.

In Clinton County, Webb and others No. 1 Hussman, NE NE SE Section 12-1n-2w, rig up. J. J. Farrelly No. 1 Berginan, NW SW NW Section 25-1n-4w, spudded and shut down. H. Flannery and others No. 1 Gerdes, NW NW SE Section 3-2n-2w, shut down at 870 feet. Petroleum Service, Ltd., No. 1 Botts, NW SW SW Section 17-2n-2w, total depth 1,113 feet, underreaming 6⅝-inch casing. E. Nollenkemper and others No. 1 Kile, SE cor. NE Section 11-3n-3w, Cypress sand at 1,018 feet, hole full of water at 1,025 feet, total depth 1,070 feet, running 6-inch casing. Kesl and others No. 1 Marbaum, NW NE SE Section 12-3n-3w, waiting for a machine to clean out. Lindsey Brothers and others No. 1 Boenhoff, NW NW NE Section 34-3n-4w, set 8-inch casing at 620 feet, drilling at 735 feet. Harris and others No. 1 Hoge, C S half SE SE Section 18-1s-5w, total depth 968 feet, underreaming 4⅞-inch casing.

In Coles County, Wheless and others No. 2 Michaels, SE SE NE Section 2-11n-7e, set 10-inch casing at 193 feet. Topped Glen Dean at 1,728 feet, drilling at 1,738 feet. Texas-Canadian Oil Co. No. 1 Dollars, C SE SW Section 3-12n-8e, rig up.

In Edgar County, Black & Moore (formerly Martin and others) No. 1 Sturgell, C NW NE Section 12-12n-11w, total depth 935 feet, shut down. A. M. Myers No. 1 Brinkerhoff, C SE SE Section 26-15n-13w of second principal meridian, shut down at 1,700 feet.

In Fayette County, Joe Longaria and others No. 1 Fisher, C SE SW Section 11-5n-2e, drilling at 121 feet. L. V. Garnier and others No. 1 C. T. Wade, NE NW SE Section 31-5n-4e, moved in rotary tools. R. B. Creager No. 1 J. H. Hiatt, 165 feet from south and 330 feet from east lines of NE SW Section 29-7n-3e (corrected location), had Weiler sand at 1,548-62 feet, shot with 40 quarts, pumped 125 bbls of oil in 12 hours; still testing. Carter Oil Co. No. 1 Hogge, SW NW SW Section 1-8n-3e, Weiler sand at 1,509-29 feet, total depth 1,560 feet, waiting for standard tools. Liggett & Davis No. 1 School, NW cor. Section 34-8n-3e, moved in rotary tools and shut down. E. Frank Jones (formerly Ulrich & Pogue) No. 1 Zanders, SE cor. NW Section 36-9n-3e, shut down at 269 feet.

In Fulton County, Ketcherside and Fisher No. 1 Kelly and Frederick, NE cor. Section 10-7n-1e of fourth principal meridian, shut down at 590 feet.

In Hancock County, Groves and Cook No. 1 Talbot, NW cor. SW Section 15-4n-5w of fourth principal meridian, shut down for orders at 530 feet. Minnie & Grady No. 1 Roberts, CSL NE SW Section 24-4n-5w of fourth principal meridian, drilling at 275 feet.

In Jasper County, National Consumers Oil Co. No. 1 Leaman, NW SW SW Section 4-8n-14w of second principal meridian, set 4½-inch casing at 1,323 feet, total depth 1,362 feet.

In Knox County, O. H. Hammer No. 1 H. Bragg, NE SE SE Section 9-11n-2e of fourth principal meridian, drilling at 300 feet.

In Macon County, Decatur Oil & Gas Co. No. 1 Cook, NE NW SE Section 21-15n-2e, Devonian lime top at 2,415 feet, Trenton lime top at 3,035 feet, total depth 3,175 feet. May abandon.

In Macoupin County, W. G. Dillon and others No. 1 Keele, SE SE NE Section 32-10n-9w, drilling at 835 feet.

In Madison County, L. C. Simmell and others No. 1 Mary H. Keller, NE NE SE Section 7-3n-8w, set 8-inch casing at 460 feet, drilling at 560 feet. Penn Illinois Oil Co. No. 1 Hurlbrink, NE NE NE Section 19-4n-8w, total depth 1,056 feet, running 6-inch casing.

In McClean County, Oil Well Drilling Co. No. 1 Daubman, SW NE NE Section 33-22n-2e, rigged up standard tools.

In Montgomery County, Soliday & Sams, NE NE SW Section 11-7n-3w, shut down at 1,065 feet. Southern & Petty No. 1 Sawyer, NE cor. SE NE Section 15-8n-4w, machine on ground. Swords and McDougal No. 1 Brunner, NW NE SW Section 16-10n-1w, total depth 1,050 feet, shut down. Marhill Oil Co. No. 1 Doyle, SE NE SW Section 29-10n-4w, rigged up and shut down.

In Pike County, Apex Drilling Co. No. 1 Weaver, SE NE NE Section 25-3s-4w of fourth principal meridian, shut down at 200 feet.

In Shelby County, Massad and others No. 1 Sommers, SE SW SW Section 20-10n-1e, spudded in and shut down. Corn and others No. 1 Wabash R. R., C N half N half Section 27-10n-5e, fishing for 6-inch casing, total depth 1,945 feet. Frank Frederick No. 1 Fluge, C N half NE NW Section 34-10n-5e, shut down at 697 feet. Swords & McDougal No. 1 Dorst, NW NW NW Section 17-11n-2e, set 6-inch casing at 1,441 feet, drilling at 1,508 feet. Independent Refining & Producing Co. No. 1 Hackenburg, SE SW SW Section 20-12n-2e, shut down at 1,595 feet. Ray Fisher and others No. 1 Brownbeck, SE NE NW Section 25-12n-2e, rig up. Rex Development Corp. No. 1 Odell, NE SE NW Section 20-14n-2e, drilling below 300 feet.

In Warren County, John Menkin No. 1 Simmons. SE SE NE Section 11-8n-2w of fourth principal meridian, shut down at 900 feet.

CENTRAL OHIO

NEWARK, Ohio, Feb. 27.—Completions in the Central Ohio area numbered only eight; two oil wells, three gas wells, and three dry holes.

H. E. Perkins found the Clinton sand missing in the M. M. Ryan test in Lot 18, second quarter, Howard Township, Knox County; total depth, 2,620 feet.

In Licking County, J. T. Bebout & Son No. 1 Charles Hall, is a gas well gauging 1,200,000 cu. ft. from the lime at 2,170-83 feet. The well is located in the first quarter of Newark Township, just west of the township line.

In Perry County, Jackson Township, Kissling Drilling Co. No. 1 A. Bringardner, Section 11, is a small Berea sand gas well; total depth, 750 feet. Madison Township, Atha Co. No. 1 James H. Wilkins, Section 7, made 10 bbls. the first 24 hours after a shot in Clinton sand at 2,924-64 feet.

Pawnee Corp. No. 4 Board of County Commissioners in Lot 3, Talmadge Township, Summit County, found the Clinton sand dry; total depth, 4,134 feet.

In Washington County, Barlow Township, Hope Construction & Refining Co. No. 2 J. H. Greenlees, Section 4, is a gas well with an open flow of 220,000 cu. ft. from Injun sand at 1,514-17 feet. In Fairfield Township, Witago Oil Co. No. 1 George H. Remley, Section 18, was shot with 16 quarts in the Squaw sand for a 3-bbl. oil well from sand at 1,337-53 feet. In Ludlow Township, Henry Gas Co. No. 1 John Mendenhall, Section 27, was dry and abandoned at 1,965 feet.

Lima Field

In Henry County, Harrison Township, McAfee No. 1 Lucy Damon, Section 24, was drilling at 2,480 feet. Trenton was found at 1,741 feet; St. Peter formation at 2,386 feet; sand 2,391-2,400 feet; 100 feet of water in the hole at 2,411-22 feet; 1,600 feet of water in the hole at 2,438-53 feet.

In Wood County, Portage Township, Goodwill Oil & Gas Co. is shut down at 1,878 feet on the Lester Shinew test in Section 5. Top of Trenton was found at 1,129 feet; Blue Lick water at 1,869 feet.

In Seneca County, Clinton Township, Section 26, Charles Shaw No. 1 Maude Zoller, was shot with 60

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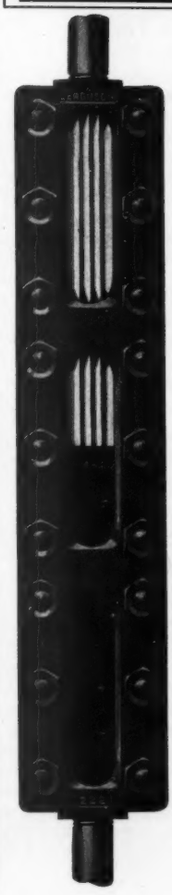

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quarts in the Trenton at 1,747-62 feet and hole filled up 200 feet with oil. Operators are now testing.

EASTERN KENTUCKY

ASHLAND, Ky., Feb. 27.—Two small oil wells are included in the report of activities in the eastern Kentucky fields. One dry hole was reported.

Boyd Knox & Brown completed No. 4 I. T. Rogers at Rogers Chapel in the South Fork district of Powell County making 3 bbls. of oil per day. In the same district, J. P. Perry and others abandoned a dry hole, No. 1 Virgil Sparks at Pilot.

Dr. Lemon and others completed No. 1 W. B. Bush on Walkers Creek in the Hell Creek district of Lee County and it is producing 5 bbls. of oil daily. In the same district Bear Track Oil Co. is making a deep test on the Hunting tract on the Kentucky River west of Beatyville, and is down 1,200 feet.

In Magoffin County, Rough River Corp. is not having any success in trying to drill by tools in hole at No. 4 on the H. B. Adams farm on Rock Lick.

In Martin County, Kentucky-West Virginia Gas Co. is drilling at 350 feet, in sand, in No. 5251 on the C. W. Preece land on Coldwater Fork.

Oklahoma Fields

(Continued from Page 70)

Mathews & Thorp No. 1 Irene, SW SW NW Section 2-1n-20w, Altus field, Jackson County, found Granite Wash at 1,449-57 feet, 1,500-65 feet, and 1,530-54 feet, was bottomed at 1,561 feet, and pumped 18 bbls. of oil daily.

Fish & Fish No. 3 Mattie, SW SE NW Section 5-1s-19w, and Chris and others No. 1 Fitzgerald, NE NE NE Section 7-1s-19w, Tipton pool, Jackson County, were locations.

Indian Territory Illuminating Oil Co. No. 1 Fillmore, SW SW SE Section 36-2s-19w, Frederick area, Tillman County, had dug cellar and pits.

Tom Palmer No. 3 Dixon, NW SW NW Section 35-6-10w, Cement field, Caddo County, was a location.

Logan County

Helmerich & Payne, Inc., No. 1 Strain, NW NW SE Section 27-16-1e, Logan County, originally bottomed at 6,920 feet, was plugged back to 5,208 feet, and produced 25,700,000 cu. ft. of gas daily. It previously had been reported abandoned.

Southwest Texas Fields

(Continued from Page 71)

Location for a deep test has been made in the Barbacoas field, Starr County, by Magnolia Petroleum Co. The well is approximately 1½ miles from production and will test the 5,300-foot sand.

Additional drilling in the north extension area of the Samfordyce field, Hidalgo County, was forecast as a result of a new sand discovery made by Fohs Oil Co. No. 1 Ed Sullivan. Casing was expected to be cemented for a production test after a drill-stem test at 3,418-36 feet, tested 1,300 feet of 25-gravity oil. The well is in Share 245, Porcion 39, northeast of Phillips Petroleum Co. No. 1 Flores, recently completed as a distillate producer at approximately 5,700 feet.

In the Richard King field, Nueces County, Southern Minerals Corp. No. 16 King has apparently opened a new sand as a 15-minute drill-stem test at 6,133-43 feet, total depth, tested 1,600 feet of 44.9-gravity oil, with a slight amount of brackish water. Casing was cemented on bottom for a production test. The well is in Section 32, about 1,000 feet south of the company's No. 15 King which produces from the regular sand at approximately 4,000 feet.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Bexar County

Somerset field: F. M. Johnson No. 1 Carruthers, 1,404 feet, 10 bbls., pumping.

Aransas-San Patricio Counties

McCampbell field: Atlantic Refining Co. No. 14-B Porterfield, perforated casing 7,193-96 feet, 200 bbls., three-sixteenths inch choke. Atlantic Refining Co. No. 1 Serger, perforated casing 7,160-63 feet, 210 bbls., three-sixteenths inch choke. Bauer and others No. 1 fee, perforated casing 7,128-31 feet, 130 bbls., eighth-inch choke. Corgey & Grote No. 4 McCampbell, 7,140 feet, 200 bbls., three-sixteenths inch choke. Richardson Petroleum Co. No. 1 Cotter & Ayers, perforated casing 7,115-30 feet, 220 bbls., three-sixteenths inch choke.

Caldwell County

Dale field: Ralph Ogden No. 2 Dinges, 2,381 feet, plugged back 2,676 feet, 165 bbls., pumping. Salt Flat field: Louis Crouch No. 5 Moses, 2,681½ feet, 60 bbls. oil, 120 bbls. water, pumping. Texamerica Oil Co. No. 7 Wilson, 2,699 feet, 100 bbls., pumping.

Calhoun County

Heyser field: Humble Oil & Refining Co. and others No. 24-A Welder, 5,486 feet, 312 bbls., three-sixteenths inch choke. Sinclair Prairie Oil Co. No. 18 Bennett, perforated casing 5,487-90½ feet, 79 bbls., 12 hours, 9/64-inch choke.

Duval County

Benavides field: Saltmount Oil Corp. No. 6-A Puig, sand 4,797-4,805 feet, 85 bbls., 12 hours, pumping. Casa Blanca field: Fred Shield No. 5 Martin, perforated casing 1,133-44 feet, 15 bbls., pumping. Eagle Hill field: Magnolia Petroleum Co. No. 17 Duval County Ranch Co., 1,470 feet, 50 bbls., pumping. Fitzsimmons field: H. J. Porter and others No. 11 Driscoll, perforated casing 4,361-68 feet, 154 bbls., quarter-inch choke. Sun Oil Co. No. 10 Bruggemann, perforated casing 4,282-90 feet, 127 bbls., 9/64-inch choke. Hoffman field: Argo Oil Corp. No. 3 Rodden, perforated casing 2,614-34 feet, 176 bbls., pumping. Longhorn field: Longhorn Drilling Co. No. 3 Miller, 5,638 feet, abandoned. Longhorn Drilling Co. No. 2-B Miller, sand 4,033-38 feet, 113 bbls., eighth-inch choke.

Guadalupe County

Darst Creek field: McCabe & Dabb No. 2 Denman, 2,620 feet, 48 bbls. oil, 150 bbls. water, pumping. McNeil Petroleum Co. No. 3 Malaer, 2,205 feet, 29 bbls. oil, 17 bbls. water.

Hidalgo County

Samfordyce field: Davis & Harrison No. 1 Lula George, 3,070 feet, abandoned. Dean, Davis and others No. 2-B Guerra, perforated casing 2,851-61 feet, 150 bbls., eighth-inch choke.

Jim Wells County

South Alice field: Robert Bowles No. 8 Ragland, perforated casing 4,985-95 feet, 135 bbls., eighth-inch choke. R. B. Bryant No. 3 Bankers Mortgage, perforated casing 5,330-36 feet, 102 bbls., 3/32-inch choke. Tom Graham No. 1-H Bankers Mortgage, perforated casing 5,329-35½ feet, 75 bbls., 3/32-inch choke.

McMullen County

Ezzell field: E. M. Jones No. 56 Ezzell, perforated casing 1,470-75 feet, 60 bbls., pumping. E. M. Jones No. 62 Ezzell, perforated casing 1,528-33 feet, 224 bbls., pumping. E. M. Jones No. 64 Ezzell, perforated casing 1,527-34 feet, 406 bbls., pumping.

Nueces County

Luby field: Seaboard Oil Co. No. 14 Shaeffer, perforated casing 4,347-50 feet, 116 bbls., eighth-inch choke. Stanolind Oil & Gas Co. No. 19 Spessard, sand 4,350-65 feet, 108 bbls., eighth-inch choke. Saxet field: J. Simmons No. 3 Harrell, perforated casing 4,723-28 feet, 168 bbls., eighth-inch choke. West Saxet field: Renwar Oil Corp. No. 2-C Kennedy, perforated casing 4,013-17½ feet, 42 bbls., three-sixteenths inch choke. Renwar Oil Corp. No. 12 McKinzie, perforated casing 5,780-85 feet, 128 bbls., 5/64-inch choke.

Refugio County

La Rosa field: Coronado Corp. No. 5 Spaulding, perforated casing 6,329-32 feet, 176 bbls., eighth-inch choke.

Starr County

Sun field: Sun Oil Co. No. 1-B Montalvo, 5,296 feet, abandoned.

Victoria County

McFaddin field: Transwestern Oil Co. No. 10-E McFaddin, sand 4,398-4,411 feet, 43 bbls., 19 hours, 3/32-inch choke

Webb County

North Killam field: Taylor Refining Co. No. 3 Guerra, 2,382 feet, abandoned.

San Patricio County

East White Point field: Shasta Oil Co. No. 1 J. A. Teeter, perforated casing 5,640-48½ feet, 131 bbls., 7/64-inch choke. Plymouth field: Plymouth Oil Co. No. 109-C Welder, perforated casing 5,610-16 feet, 72 bbls., 7/64-inch choke.

Zapata County

Comitas field: Nordan & Morris No. 7-C Haynes, sand 1,183-91 feet, 68 bbls., pumping. Escobas field: Texas Co. No. 126 Measles, sand 1,316-20 feet, 40 bbls., pumping. Mirando Valley field: Buffalo Oil Co. No. 3-C Hinnant, sand 1,920-27 feet, 85 bbls., 14 hours, jetting with gas.

Gulf Coast Fields

(Continued from Page 79)

Nos. 2 and 3 Haas Investment Co. are drilling below 6,800 and 4,200 feet, respectively.

An active leasing and royalty-buying campaign is in progress along the northern tier of parishes and several blocks are scheduled to be drilled in the near future. In Pointe Coupe Parish, Seaboard Oil Co. and others are scheduled to start drilling No. 1 Hodgood on the Pikes Peak prospect in Section 8-1s-7e. This is the first Wilcox test announced since the discovery of the Eola field.

In St. Martin Parish, Vendome Petroleum Corp. No. 1 Kenilworth Plantation, which looms as a possible pool opener for St. Bernard Parish, cemented 9⅝-inch casing on bottom at approximately 10,863 feet, and is preparing to core in search of a deeper sand. An electrical survey showed favorable indications in 68 feet of sand between 10,597 and 10,650 feet, and had shown another possible sand at 10,450 feet.

On the Henderson salt dome, St. Martin Parish, Texas Co. No. 11 St. Martin Land Co. has been abandoned. The well is in Section 21-8s-7e, and additional development is expected for this area in view of the favorable showing the well made at 8,060-65 feet.

ALABAMA

H. A. Stebinger No. 1 Robertson, Section 19-10s-26e, Barbour County, Alabama, is bottomed at 4,950 feet, and 7-inch casing will be cemented for a production test. The well is reported to have shown gas at approximately 3,700 feet, and below 4,300 feet, and that approximately 300 feet of asphaltic sand and shale was logged at 4,000 to 4,300 feet. It is also reported that sand and shale with streaks of sandstone with shows of gas were logged between 4,300 and 4,950 feet. The operator reports that 7-inch casing will be cemented at 4,500 feet, with 450 feet of 4¾-inch perforated pipe on bottom of the 7-inch, for the production test.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Chambers County

Anahuac field: Gulf Oil Corp. No. 10 Wilcox, perforated casing 7,060-90 feet, 62 bbls., flowing by heads. Humble Oil & Refining Co. No. 39 Middleton, sand 7,054-80 feet, 598 bbls., quarter-inch choke.

Galveston County

Dickinson field: Pan American Production Co. No. 4 Craig, perforated casing 8,523-32 feet, distillate well. League City field: George Echols No. 2 Ross-Stewart, perforated casing 9,236-60 feet, 1,074 bbls., quarter-inch choke.

Harris County

Fairbanks field: Amerada Petroleum Corp. and others No. 2 Hahl, sand 6,830-52 feet, 142 bbls., eighth-inch choke. Amerada Petroleum Corp. No. 5 Munger, perforated casing 6,836-41 feet, 98 bbls., eighth-inch choke. Friendswood field: Humble Oil & Refining Co. No. 8-B Humble-West, sand 5,725-6,047 feet, 600 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 10 Keisling-Dixon, sand 5,869-6,052 feet, 592 bbls., quarter-inch choke. Tomball field: Humble Oil & Refining Co. No. 5-A Kobs, sand 5,543-67 feet, 47 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 6 Treichel, 5,566 feet, 480 bbls., quarter-inch choke.

Polk County

Ace field: Peyton Brothers No. 3-B Kirby West Lumber Co., perforated casing 7,748-62 feet, 493 bbls., quarter-inch choke.

Wharton County

Pickett Ridge field: Peyton Brothers No. 4 Duson, perforated casing 4,565-68 feet, 30 bbls., 9/64-inch choke.

North Louisiana, Arkansas

By GEORGE WEBER

2 Important Arkansas Wells Dry; Extensions in 3 Pools

SHREVEPORT, La., Feb. 27.—Scattered field completions in the tri-state district in the past week were offset by failures, both permanent and temporary, in a number of important wildcats and field prospects.

Two North Louisiana wildcats were successful in bringing in new small production in LaSalle and De Soto parishes. The Shreveport field of Caddo Parish, and the Magnolia and Village fields of Columbia County, Arkansas, added new oil wells.

Failure marked the efforts of wildcatters in three South Arkansas wildcats. In Lafayette County, Shell Petroleum Corp. and Ohio Oil Co. No. 1 Warren, a deep Smackover lime test in the vicinity of Stamps, was abandoned at a total depth of 7,420 feet. The test, C SE SE Section 13-16-24, had cored porous saturated oolitic lime in the Reynolds member, in the top of the Smackover formation, but very low permeability prevented completion as a commercial producer. After several attempts at completion, using acid, the test was plugged back to 7,168 feet and drilled out to 7,177 feet and underreamed to 10 inches. The well was treated with 1,000 gallons of acid, and operators swabbed 310 bbls. of salt water, with a slight show of oil and gas. The hole was swabbed down, showing salt water, with the slight oil and gas showing continuing, but was abandoned late in the week at total depth of 7,177 feet and old total depth of 7,420 feet.

A second Lafayette County wildcat met with failure, Wadley-Erwin and others No. 1 G. W. Taylor, C NE SW Section 15-19-26, about 10 miles northeast of the Miller County extension of the Rodessa field, was abandoned after exploring the Rodessa producing formations in the lower Glen Rose, and coring into the top of the Travis Peak formation. The test last week topped the Pettit lime at 6,657 feet, and the Travis Peak at 6,753 feet, with no showing of oil in either. The Gloyd was previously found porous at 6,071-76 feet, but showed salt water, and the Dees section at 6,114-17 feet was tight. The test was abandoned at 6,802 feet.

The third abandonment of the week in South Arkansas was the Deep Rock Oil Corp. No. 1 Wesson, SE cor. NE Section 23-15-19, on a geophysical prospect in the Stephens field area of Ouachita County. This was also a Smackover lime test, and the lime, topped at 5,923 feet showed porosity and oil, similar to conditions found in the Shell Petroleum Corp. No. 1 in Lafayette County, with the same lack of permeability, which prevented success. The Deep Rock test had been plugged back and perforated at 5,930-50 feet, after which it showed salt water and a slight show of 27.5-gravity oil. The wildcat was abandoned at a total depth of 6,053 feet.

Failure of these Smackover tests along the north and west edges of the trend currently under development, tend to discourage further drilling in the immediate vicinity of the abandonments. Prospects lying to the south and east, however, seem to have generally improved characteristics as regards permeability and saturation, and the drilling activity in the major portion of the South Arkansas trend is not expected to be affected by the two failures.

New Wells in Magnolia

The two most active fields of Columbia County, Magnolia and Village, added three wells to new flush production during the past week. In the former pool, W. L. Goldston No. 1 A. C. Garrett, C SE SW Section 13-17-20, was brought in for an initial production of 390 bbls. per day through a 12/64-inch choke, with tubing pressure at 1,350 pounds, but no gauge on the casing. Saturation was topped at 7,463 feet and cored as far as 7,510 feet, total depth.

The second Magnolia field producer is Southwood Oil Co., Inc., No. 1 J. O. Hutcheson, C NE SW Section 14-17-20, which made an initial of 302 bbls. per day through a 12/64-inch choke, tubing pressure 1,300 pounds and casing pressure 1,400 pounds. Total depth is 7,565 feet. Saturated lime was topped at 7,502 feet and was cored as far as 7,565 feet, total depth. The Magnolia field is showing the thickest section of saturated oolitic lime in the Reynolds member of the Smackover that has yet been discovered in South Arkansas.

The Village field added Standard Oil Co. of Louisiana No. 1 Lewis Unit, SE NW NE Section 15-17-19. Porous lime was topped at 7,394 feet and 6-inch casing was set at 7,437 feet. The plug was drilled out to 7,439 feet in saturated lime, and the well was brought in making an initial production gauge of 12 bbls. per hour through a 5/32-inch choke with a gas-oil ratio of 780 to 1, and casing pressure of 2,075 pounds and tubing pressure of 1,425 pounds.

A west edge well was added to the Schuler field of Union County as the E. M. Jones No. 2 J. C. Morgan came in making an initial gauge of 160 bbls. through a 10/64-inch choke, with tubing pressure of 700 pounds and casing pressure of 250 pounds. The well was completed in the Jones sand at 7,582-7,611 feet.

Estimated Daily Production

Estimated daily gross production all companies week ending February 24, 1939:

NORTH LOUISIANA

Bellevue	675
Caddo light	4,135
Caddo heavy	2,615
Converse	510
Cotton Valley heavy	100
Cotton Valley light	*10,970
Cross Lake	3,025
De Soto and Red River	1,170
Elm Grove	205
Haynesville	3,050
Holly	80
Homer	2,660
Lisbon	6,685
Pleasant Hill	105
Rodessa	27,805
Sarepta-Carterville	†400
Sligo	1,105
Sugar Creek	275
Urania	2,700
Zwolle	2,785
Total	71,055

SOUTH ARKANSAS

Buckner	1,335
Champagnolle	1,875
El Dorado	1,700
Lisbon	250
Magnolia	3,025
Miller County	350
Nevada	595
Rodessa	5,165
Schuler	18,905
Smackover light	1,935
Smackover heavy	15,165
Stephens	510
Troy	965
Urbana	1,105
Village	515
Total	53,395

Texas side of Rodessa field 29,530 bbls. daily.
*4,010 bbls. is distillate.
†145 bbls. is distillate.

De Soto Parish

A wildcat northwest of the town of Logansport, in De Soto Parish, showed oil and is a potential pumper. The test, S. S. Alexander No. 1-A Stoll, in Section 5-12-16, in the previous week reported 2,500 feet of oil in the hole. This past week, tubing was run, and the well flowed 10 bbls. a day for three days, and then went dead. A pump will be moved in to install on the new well, which is bottomed at 3,145 feet.

A second small oil well was brought in in LaSalle Parish about 4 miles south of the Urania field. G. C. Walsenham No. 1 Dean, NE cor. SE Section 23-9-1e, has sand at 1,602-05 feet and was completed on the pump, making 5 bbls. per day of oil with much salt water. Total depth is 1,654 feet. The operator is moving in for a second test in the area.

Shongaloo Test

In Webster Parish, Magnolia Petroleum Co. No. 4 Branton, deep Shongaloo test, set 2½-inch tubing on a packer at 9,037 feet and tested 56 bbls. of distillate together with 832,000 cu. ft. of gas in 15 hours, with tubing pressure at 300 pounds. Later in the week the packer gave way, and according to reports, salt water came in and the oil flow ceased. Total depth of the well is 9,203 feet.

Vivian Area

In the newly active Vivian pool of Caddo Parish, activity was suspended due to adverse showings in wells on the 2,400-foot sand. The Burnham Drilling Co. No. 1 Gray, in NW SE Section 34-22-16, was abandoned. The test showed salt water in the sand at 2,451-54 feet and was deepened to 2,495 feet without finding any more sand. It was then plugged back to 2,250 feet and casing perforated at 2,095-99 feet where it again tested salt water after which it was abandoned. This brought abandonment of the same company's south offset location, and many of the rigs moved into the field during the past two weeks were shut down, awaiting further developments.

Rocky Mountain Fields

(Continued from Page 83)

Glacier Prod. Co. No. 4 Simero, C NE NW Sec. 5-33n-5w. Spdg. 80 ft.; (first report).
Yukon Oil Co. No. 2 Lungren, C NE NW Sec. 26-37n-5w. R.O.G.
Santa Rita O. & G. Co. No. 9 Tribal, NE SE NE Sec. 16-35n-6w. R.U.
Wm. Hanlon No. 4 All.-128, SW SE NE Sec. 12-32n-6w. Drlg. 315 ft.
Glacier Prod. Co. No. 2 Scheuren, C SW SW Sec. 20-33n-5w. Drlg. 1,410 ft.; Colo. 705 ft.; 10¾-in. 725 ft.
Glacier Prod. Co. No. 5 State, C NW NW Sec. 16-35n-5w. Drlg. 2,625 ft.

Petroleum County

H. Clark Rowland No. 1 Brundidge-Mink, SE NW Sec. 35-14n-25e. Drlg. 260 ft.

Teton County

Zodiac Oil Co.-Gulf States Oil Co. No. 1 Kellogg, NE NW NE Sec. 33-28n-5w. S.D. 2,165 ft.
Gulf States Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW Sec. 5-27-5w. S.D. 2,525 ft. until spring.

Toole County

The first squeeze job attempted in the Kevin-Sunburst field took place in M. W. Cassidy No. 1 Phoenix, CNL NW NW Section 28-35n-4w, in the new West Kevin pool, which had a show for a producer in the top of the Madison lime at 2,315 feet, but ran into water at 2,325 feet, total depth. It was cemented with the Perkins process and is drilling plug at 2,315 feet.

One new operation was getting under way.

Big West Oil Co. No. 10 Gunderson, 1,980 ft. from WL and 1,100 ft. from NL, Sec. 19-35n-2w. Spdg. 30 ft.; (first report).
Fulton-Commonwealth No. 2 Thompson, SE NW SE Sec. 28-35n-3w. S.D. 160 ft.
G. M. Plotke No. 2 Ward, SW cor. Sec. 28-35n-3w. Drlg. 640 ft.
Coolidge & Coolidge No. 3-A State, NW NE NW Sec. 36-36n-2w. Drlg. 720 ft.
G. & A. Oil Co. No. 12 Goeddertz, SE NE SW Sec. 23-35n-3w. T.D. 1,680 ft.; ran tbg. to acd. and S.D. acct. weather.
Sid Porter No. 1 Bradley, SE cor. Sec. 3-34n-2w. T.D. 1,515 ft.; contact 1,515 ft.; 900 ft. O.I.H.; prep. to test.

UTAH

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. Drlg. in salt at 2,845 ft.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE Sec. 4-22s-19e. Drlg. 4,110 ft.

North and East Texas

By
D. H. STORMONT

Clay County Has Prospects of a New Strawn Sand Pool

WICHITA FALLS, Tex., Feb. 27.—Indications of a new deep Strawn sand oil pool in Clay County together with important developments in almost all of the North Texas counties, featured the week's activity in this increasingly active district.

L. T. (Bobby) Burns No. 1 Browning, in Block 94, J. Belcher Survey, in southwestern Clay County, 6 miles southwest of Blue Grove, in a drill-stem test, recovered 1,200 feet of 42-gravity oil in 25 minutes from 4,441-61 feet. The tool was then closed five minutes and the pressure built up to 1,800 pounds. An electrical survey was run which indicated oil sands at as many as three different horizons between 3,330 feet and 4,430 feet. The crew cemented 7-inch casing at 4,433 feet but the owner has not said when he will drill the plug. Several large companies hold acreage around the Burns test including Shell Petroleum Corp. and Superior Oil Co. The Texas Co., Phillips Petroleum Co. and Magnolia Petroleum Co. are reported to be buying acreage in the area.

Northeast Cooke County's Walnut Bend field had its fourth oil well in the process of completion as Sinclair Prairie Oil Co. No. 4 Best, south side of the field, flowed at the rate of 45 bbls. per hour through casing into storage. Operators plan to let the well clean itself through casing and then take a potential gauge through tubing. Production is from 4,947-77 feet. Seeking to establish a trend for the field, the company has staked No. 2 Putman in the T. W. Ward Survey, Abstract 1088, 660 feet north of the discovery well and an equal distance east of No. 1 Putman, a dry hole drilled as the second test in the area.

Grayson County

Production in south Grayson County from the 4,900-foot horizon opened in Cooke County to the northwest, will be sought in a wildcat staked by E. F. Stroube and L. T. Barton. The test is a 6,000-foot contract, with drilling scheduled to start at once. Location is in the southwestern corner of the 192-acre Millie Williams farm in the northwestern part of the Solomon Nix Survey.

Ten miles to the west, F.H.E. Oil Co. No. 1 Graham, in the Collinsville area, was dry, and is being abandoned at a total depth of 3,905 feet. It missed the horizon discovered by Mildred Oil Co. from 3,862-74 feet.

Wichita County

A deep wildcat in northwestern Wichita County, just south of the Red River, has been staked. It will seek production in the various Strawn sands now producing in Wichita and Archer counties. H. S. Freeland of Wichita Falls, and associates staked No. 1 J. D. Cooper, 330 feet out of the most northerly corner of the west 150 acres of the Cooper 250-acre tract in the Henry Hastle Survey, Abstract 92. The wildcat is 8 miles north of Wichita Falls and one-half mile south of the Red River. Contract depth is 4,000 feet.

Also in Wichita County, Continental Oil Co. and Petroleum Producers Co. were preparing third-stage acid treatment of 10,000 gallons for No. 1 Albert Finkler, in the Green Reynolds Survey, offsetting the discovery well drilled by the same operators on the Asylum lands. After the first two acid treatments the well showed a considerable increase, but production soon dropped off to its present rate of about 2 bbls. of oil per hour.

Montague County

Officials of Sunray Oil Co., Tulsa, announced it has bought the Rogers & Rogers deep discovery well west of Nocona in Montague County and a half interest in 479 acres in the area from Ramsey Petroleum Corp. The company bought from Rogers & Rogers, Inc., the discovery well, No. 1 J. E. A. Burnett, and the 60-acre drill site. The sale is expected to bring development to the pool, idle since it was discovered late last year.

The pipe line situation also is reported settled with Stanolind Oil & Gas Co., lease holder in the area, said to have agreed to tie in from its carrier a few miles west of the discovery well, which is producing from sand at 4,656 feet and has gauged as high as 527½ bbls. of oil in 24 hours.

Baylor County

Southwest limits of Baylor County's new oil pool southeast of Seymour apparently have been defined by the test being drilled by British American Oil Co. The well is the second in the area and is contracted to 5,500 feet. It missed the 2,600-foot pay section of the discovery well and is drilling ahead below 2,635 feet. Location is on the J. E. Cope lands, northwest corner of Section 220.

NORTH TEXAS COMPLETIONS

Archer County

Cree & Hoover No. 2 J. H. Turbeville, 1,491-1,502 feet, 25 bbls. E. P. Griffin No. 1 L. F. Wilson, 630 feet, dry. Ligon & Deep Oil Development Co. No. 1 L. F. Wilson, 4,264-4,304 feet, 585 bbls. Madden & Goldsmith No. 3 W. B. Hamilton, 2,628-31 feet, 25 bbls. Westmount Oil Co. No. 7 T. J. Dempsey, 4,133-50 feet, 16 bbls. Bridwell Oil Co. No. 2 Bridwell, 1,877 feet, dry. P. C. Burns No. 2 N. I. Andress, 910-20 feet, 25 bbls. Eichler and others No. 1 Bell Brothers, 1,130-36 feet, 10 bbls. Golding & Cochran No. 6 J. M. Kunkel, 1,140-48 feet, 10 bbls. Shappell Oil Co. No. 16 Grace Bell, 976-80 feet, 75 bbls.

Baylor County

Petroleum Production Co. No. 1 Portwood L, 1,500 feet, dry.

Clay County

Houston Bowers No. 8 C. J. Shumake, 1,136-45 feet, 225 bbls. Duncan No. 6 Duncan, 1,164-93 feet, 175 bbls. H. S. Grace No. 1 James Hunt, 1,503 feet, dry. Shaw Oil Co. No. 1 G. E. Myers, 1,360 feet, dry.

Cooke County

Sinclair Prairie No. 3 J. M. Best, 4,925-50 feet, 1,200 bbls. F. Snuggs No. 1 Lewis, 1,821 feet, dry.

Jack County

R. D. Compton No. 1 Wilson, 380-92 feet, 25 bbls. N. B. Crenshaw No. 1 Kinder, abandoned location. A. E. Sewell No. 2 George Edward, 340-45 feet, 2 bbls.

Montague County

Seitz and others No. 5 Roach B, 2,138-52 feet, 125 bbls. W. H. Yeargin No. 1 Bouldin, 792-811 feet, 10 bbls.

Wichita County

King Oil Co. No. 3 Rathke, 2,633-43 feet, 35 bbls. Board of Mineral Development No. 5 State Lands, 3,665-3,737 feet, 750 bbls. Consolidated Oil Co. No. 2 James, 3,875-3,998 feet, 1,500 bbls. E.C. Oil Co. No. 7 Mrs. Anna Mangold, 3,735-3,840 feet, 850 bbls. Venmex Oil Co. No. 3 H. S. Griffin, 3,750-3,825 feet, 800 bbls.

Wilbarger County

Maxwell & Bazzoon No. 1 C. Zipperle, 973 feet, dry.

Young County

Barrett & Reynolds No. 1 J. W. Burgess, 2,142 feet, dry. C. W. Clark No. 1 H. M. Goss, 1,177-1,200 feet, 10 bbls.

EASTERN TEXAS

DALLAS, Tex., Feb. 27.—After nine years of continuous drilling activity, it appears that the East Texas field is nearly drilled up. Activity has dropped to a new low in the field and with little more than spacing exceptions being drilled at the present time, not much activity is seen in the world's greatest field.

There have been almost 26,000 wells drilled since the field's discovery. The past week's survey shows only seven new locations, 22 drilling wells and 12 new completions for an aggregate initial hourly potential of but 537 bbls. In the form of contrast, in the same week two years ago, there were 41 new locations, 109 drilling wells, and 40 completions. Looking still farther back, on the corresponding week four years ago, there were 82 new locations, almost 200 drilling wells and 77 new completions.

Upshur County

W. E. Brown, C. E. Gardner and J. L. Higginbotham, all of Dallas, have announced location for a Woodbine sand wildcat test 2 miles north of Gilmer in Upshur County. Location was staked in the southeast corner of the southeast 80 acres of the J. W. Crawford 200-acre tract, J. Thomas Survey. Richards & Holloway of Tyler have the contract and are to start moving in immediately. The test is on a block of some 4,000 acres.

Navarro Crossing Field

South side limits of Houston County's Navarro Crossing field are due to be expanded as Humble Oil & Refining Co. are reaming down to set casing in No. 1 Tyron after the well found broken gas and oil showings in coring to 5,880 feet.

About 4 miles north and west of the field, Humble is digging pits for its No. 1 E. F. Swift, a new wildcat located in the northeast corner of Leon County. Seeking the Woodbine sand, the well is on a 1,100-acre tract in the W. Subblett Survey, Abstract 779. The company will move in a rig from the East Texas field. The new rig is necessary as Humble's one rig in the field is due to be moved to a wildcat outpost to the field, the company's No. 1 Mobley, about a mile south of the field.

Talco Field

Eastern limits of Titus County's portion of the Talco field received its promised three-fourths mile extension as Humble No. 1 T. G. Temple tested on pump showing 10 to 12 bbls. of oil per hour. Bottomed at 4,332 feet, production is through perforations in the casing. Located in the W. N. Baker Survey, the well logged 12 feet of saturation.

Completion is also reported for an outside well in the Franklin County portion of the field. The Nathan Pipe & Supply Co. No. 1 Bates gauged 274 bbls. of oil per day, pumping, from a total depth of 4,307 feet.

EAST TEXAS COMPLETIONS

(One-hour tests)

Gregg County—Kilgore Area

Humble Oil & Refining Co. No. 96-B Laird, 3,580-3,618 feet, 35 bbls. Sun Oil Co. No. 4 E. L. Walker, 3,684-91 feet, 8 bbls. J. J. Jenkins No. 4 J. S. King, 3,542-66 feet, 50 bbls.

Rusk County—Kilgore Area

Humble Oil & Refining Co. No. 43-A S. S. Laird,

(Continued on Next Page)

Michigan Field Report

By
O. C. PRESSPRICH

6,000-Bbl. Well in Redding Pool Offsets a Fair Producer

SAGINAW, Mich., Feb. 27.—The past week represented a banner period in Michigan's oil regions. A 6,000-bbl. well was completed in the prolific Redding Township field in Clare County. Nine oil wells added 10,000 bbls. per day to the potential production of the state. The race for new production in the rapidly growing Allegan and Van Buren county fields saw no diminution. Some success was registered in the work of attempting to revive exhausted Dundee lime wells in Ogemaw County by deepening to the Monroe formation.

On the other hand 9 of the 19 wells completed in the state were dry and one was a gas well.

Drilling an offset, only about 700 feet from a recent completion that produced only nominally, C. L. Maguire, Inc., continuing operations at the southeast corner of the exceptional Van Horn pool in Redding (19n-6w), Clare County, brought in its No. 1 Barlow, NE NE SE Section 3, with a natural daily flow estimated at 6,000 bbls. A tremendous gas pressure heightened effect of the strike and the drilling crew experienced great difficulty in shutting off the flow. At the start a 500-bbl. tank was filled in a little under two hours. Three attempts were made before the crew succeeded in pinching-in the well.

The Maguire interests brought in a smaller well in that territory two weeks ago. The big Barlow well was the second important completion in the Redding field in the past two weeks, being even better than the Socony-Vacuum Oil Co. strike of two weeks ago in Section 33, which came in at 5,000 bbls. daily.

Western Fields Predominate

Eleven of the 19 completions of the week were in the western Michigan fields, six being in Allegan County and five in Van Buren. With numerous additional wells in the two territories at various depths, there was no indication of a let-down in activity. Of the 21 drilling permits issued last week by the State Conservation Department, 12 were for wells in Van Buren and five for Allegan. Two permits were granted for more exploratory tests in the vicinity of the new Kent County oil strike, both for tests in Walker Township. Nine of the Van Buren County permits were for the Bloomingdale field, which saw four completions this past week.

In Allegan County there were six completions, three in the new Salem discovery of last December, about 2 miles north of the original Salem field. In the new field Socony-Vacuum Oil Co. and Gordon Oil Co. brought in successful wells, each rated at 1,200 bbls. daily after acid. The Daily Crude Oil Co. No. 1 Weber, nearby, was a failure and was abandoned at 1,700 feet.

Best of the week's lot in the Bloomingdale Township field in Van Buren County was the J. W. McIntosh No. 1 Bert Klapp, which was acidized to 600 bbls. daily at 1,222 feet. It is located in Section 8; two other completions in that section—the Ralph La Blanc No. 1 Nellie Melvin and the D. F. Jones No. 1 Pease—were failures at 1,240 and 1,250 feet, respectively. The fourth Bloomingdale completion, Fred P. Hurt No. 2 Heasley in Section 7, was acidized to 100 bbls. daily at 1,225 feet. W. J. Sovereign gave up operations on his No. 1 West Michigan Savings Bank, NE NW SW Section 11, Bangor Township, Van Buren County, after failing to find a show at 1,107 feet.

The line of completions stretched diagonally from an unsuccessful exploratory test in Leelanau County, near the northwest shore of the Michigan lower peninsula, to St. Clair County's Fort Gratiot area. Lupher Drilling Co. abandoned No. 1 Wilce Farm Orchard Co. in Empire Township, Leelanau County, at 3,000 feet. The Fort Gratiot failure was Lee Brown No. 1 Metcalf, abandoned after neither oil, gas nor water showed in 730 feet. It is at the rim of the Michigan basin where the Dundee comes closest to the surface.

The new gas well, gauged at 85,000 cu. ft. daily, was brought in in Ravenna Township, Muskegon County. It is the West Michigan Consumer Co. No. 1 Ackerman, which drilled into the gas in the Berea sand at about 1,360 feet.

Oil men were unconvinced, but hopeful, as a result of the recent deepening test in Section 6, Mills Township, in the West Branch field. The well is on T. F. Caldwell's State lease. Oil was found at 3,600 feet, after deepening into the Monroe formation 1,150 feet below the old producing horizon in the Dundee limestone.

Treated at the lower depth with 500 gallons of acid the well has been averaging 25 bbls. daily. The crude varies considerably from that of other fields, being thicker and pumping to the accompaniment of heavy hydrogen sulfide fumes. Two similar experiments had been made previously—in Akron Township of Tuscola County and in Section 3, Monitor Township, Bay County—with comparable results, a similar oil and presence of the fumes.

Carl Winder, state conservation department geologist, discussing the experiments, declared: "This development would indicate a close formation between the Dundee and Monroe formations. It indicates the possibility of deepening old wells in some of the older fields and making them produce again, as it is below an already producing formation."

The following is a list of the past week's Michigan completions:

Allegan County

Cheshire Township (1n-14w)—Still dry at 1,375 feet, the E. W. Morris No. 1 Seeley, NE SE SE Section 24, was abandoned.

Martin Township (2n-11w)—The Smith Petroleum Co. No. 1 David Laraway, NW NE NE Section 7, was abandoned at 1,735 feet.

Otsego Township (1n-12w)—Bridger Basin Oil Co. completed a trifling "half and half" well when its No. 1 Norton, NE NW NW Section 30, drilled in at about 1,400 feet and was acidized to yield 10 bbls. daily, half of which was water.

Salem Township (4n-13w)—The new Salem field, discovered last December about 2 miles north of the original Salem discovery, was the scene of three more completions during the past week, two being sizable producers, the third a failure. The Socony-Vacuum Oil Co. No. 1 Norgaard, SW SW SW Section 1, and the Gordon Oil Co. No. 1 William Miller, NE NE NE Section 10, were acidized to production of 1,200 bbls. daily, each. The failure was the Daily Crude Oil Co. No. 1 Weber, NW SW NW Section 11, dry and abandoned at 1,700 feet.

Arenac County

Adams Township (19n-3e)—Arenac's only completion of the week, the Sterling Drilling Co. No. 1 Hetzel, SE NE NW Section 26, produced at a daily rate of 140 bbls. after hitting the pay and being acidized at 3,002 feet.

Clare County

Freeman Township (18n-6w)—C. L. Maguire came through with the find of the week, his corporation's No. 1 Barlow, NE NW SE Section 3, hitting the pay level at a reported 3,899 feet and accompanied by tremendous gas pressure, running wild at a 6,000-bbl. daily clip before operators were successful in pinching it in after more than 12 hours.

Redding Township (19n-6w)—Pure Oil Co., controlling most of the profitable Redding field, completed a moderately successful producer, its No. B-4 James S. Bicknell, C N half SE SE Section 28, being acidized to 250 bbls. daily at 3,903 feet.

Leelanau County

Empire Township (28n-14w)—A shot in the dark missed as Lupher Drilling Co., wildcatting near the northwestern tip of Michigan's lower peninsula, abandoned its No. 1 Wilce Farm Orchard Co. well, SW NW NW Section 34, at approximately 3,000 feet.

Muskegon County

Ravenna Township (9n-14w)—West Michigan Consumer Co. No. 1 Ackerman, C NE Section 4, came in a small gas producer, which gauged 85,000 cu. ft. daily after getting into the Berea at 1,362 feet.

Ogemaw County

West Branch Township (22n-2e)—Weber Oil Co. No. 7 Crawford, SE NE SE Section 28, was acidized to 100 bbls. daily, being drilled into the pay at 1,760 feet.

Ottawa County

Zeeland Township (5n-14w)—R. C. Lentz No. 1 Palmbos, NW NE SE Section 29, was abandoned at 1,500 feet.

St. Clair County

Fort Gratiot Township (7n-17e)—An exploratory drill on the state's east coast was abandoned after neither oil, gas nor water showed at a depth of 730 feet. The attempt was made in an area rimming the Michigan basin and where the Dundee comes nearest the surface. The failure was the Lee Brown No. 1 Metcalf, NW NE NW Section 6.

Van Buren County

Bangor Township (2s-16w)—W. J. Sovereign No. 1 West Michigan Savings Bank, NE NW SW Section 11, was a failure, being abandoned at 1,107 feet.

Bloomingdale Township (1s-14w)—Four completions were recorded in the Bloomingdale field, where unsystematic exploitation continues at a rapid pace. Two of the completions were failures, the two others nominal producers. The Fred P. Hurt No. 2 Heasley, NE NE SE Section 7, was acidized to 100 bbls. daily at 1,225 feet. The D. F. Jones No. 1 Pease, SE NW SE Section 8, was abandoned as a dry hole at 1,250 feet. The Ralph La Blanc No. 1 Nellie Marvin, NE SW SE Section 8, likewise was worthless at 1,240 feet, but the J. W. McIntosh No. 1 Bert Klapp, SE NE SW Section 8, turned out the best of the lot, drilling in at 1,222 feet and being acidized to 600 bbls. daily production.

East Texas Fields

(Continued from preceding page)

3,655-3,721 feet, 13 bbls.; No. 98-B S. S. Laird, 3,575-3,624 feet, 40 bbls. Shell Petroleum Corp. No. 32 R. Russell, 3,575-3,625 feet, 40 bbls.

Rusk County—Joiner Area

Humble Oil & Refining Co. No. 59 L. Price, 3,720-30 feet, 60 bbls.; No. 60 W. L. Price, 3,683-3,732 feet, 45 bbls. Konawa Operating Co. No. 10 F. J. Cox, 3,698-3,718 feet, 40 bbls.; No. 11 F. J. Cox, 3,700-20 feet, 40 bbls. G. B. Ray No. 13 F. B. Wilson, 3,606-10 feet, 66 bbls.

Upshur County—Longview Area

Shell Petroleum Corp. No. 28 C. C. Landers, 3,636-3,715 feet, 60 bbls.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Franklin County

In the Talco field, Nathan Pipe & Supply Co. No. 2 Strickland, 4,279-4,307 feet, 274 bbls.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Feb. 25.—On the west flank of South Turner Valley, Royalite Oil Co. No. 36, LSD 13-14, Section 32-18-2w5, finished in the Madison limestone at 7,910 feet, developed a flush of 94 bbls. an hour after one acid shot of 6,000 gallons. On official test it flowed 1,859 bbls. a day through 1-inch choke, with gas-oil ratio around 800 feet per barrel. It was given a temporary allowable of 263 bbls. a day, the fifth largest in the field. The largest producer is now Home Oil Co. No. 2 Millarville, in North Turner Valley, with 328 bbls.; ranking wells being Royal Canadian No. 2, with 302 bbls.; Vulcan-Brown No. 1, 283 bbls., and Extension Royalties No. 1, 277 bbls.

In West Central Turner Valley, Royalite No. 37, LSD 11, Section 5-19-2w5, offsetting Vulcan-Brown No. 1 to the west, finished 435 feet in the limestone at 7,628 feet and is testing, with indications of a large producer.

In North Turner Valley, Royalite No. 35, LSD 7, Section 27-20-3w5, is below 6,364 feet after getting the Madison limestone at 6,173 feet.

In South Turner Valley, D. & D. Oils No. 1, LSD 12, Section 9-18-2w5, is adjusting tubing and testing after a second acid treatment. It finished in the black lime at 7,400 feet.

Okalta Operations

West of the proven field, Okalta Oil Co. No. 6 deep test, LSD 3, Section 30-18-2w5, plugged back to 9,994 feet after getting salt water in the lower lime, has dismantled rotary outfit. A cable rig bull-wheel will be set up and swabbing resumed in the upper porous horizon, and later a 3-inch bottom-hole pump will be installed and the present tubing replaced with 3-inch. Swabbing with rotary got considerable crude from the upper lime but did not develop a steady flow, but pumping is expected to develop commercial production.

The rotary outfit from No. 6 has been rigged at Okalta No. 8, LSD 6, Section 16-18-2w5, which is deepening from 2,820 feet.

Bottom-Hole Pressures

Detailed figures of bottom-hole pressures in 67 Turner Valley crude producers, secured in official tests taken in January, show considerable variance in the new figures. Home Oil Co. No. 2 Millarville, LSD 3, Section 33-20-3w5, in North Turner Valley, has the highest bottom-hole pressure, 3,055 pounds, while the lowest is in Share Royalties No. 1, LSD 1, Section 29-20-3w5. Some 17 wells show improvements in comparison with previous pressures, two are unchanged and three are new producers previously untested. The earlier pressures were recorded last September, except in wells completed since then. Declines of pressures vary from 8 pounds in Globe Royalties No. 1 to 1,260 pounds in Richwell Oil Co. No. 1.

West Side Drilling

In West Central Turner Valley, Davolite Oil Co. No. 1 is preparing to drill in LSD 10, Section 18-19-2w5. Location is immediately southwest of Section 20-19-2w5, where Home Oil Co. in 1926 developed a large naphtha production; and about 3 miles north and 1 mile west of the nearest west flank crude producer. The company is a subsidiary of Davies Petroleums, which has three west flank crude producers.

In Section 7-19-2w5, Valley Drilling Co. No. 1, LSD 11, is below 308 feet after setting 16-inch surface casing at 250 feet.

In Section 6-19-2w5, East Crest Oil Co. No. 4, LSD 8, is below 6,045 feet and now logging 90 feet shallower than Anglo-Canadian No. 1 producer.

In Section 5-19-2w5, Calwin Royalties No. 1, LSD 15, is below 3,202 feet. Royalite Oil Co. No. 40 has location in LSD 4, a quarter mile due north of Anglo-Canadian No. 1 producer. Winalta Royalties No. 1, LSD 1, is below 1,987 feet.

In Section 32-18-2w5, George Harris and associates No. 2, LSD 15, is below 3,080 feet. Oil Ventures No. 1, LSD 15, is below 3,187 feet. Vantage Oils No. 1, S half LSD 12, is below 869 feet. British Colonial Oils No. 1, LSD 5, is in the Benton formation below 4,652 feet.

In Section 29-18-2w5, Royalite Oil Co. No. 30, LSD 3, offsetting Consolidated Royalties No. 1 producer to the north, has spudded and is below 975 feet. Royal Canadian Oil Co. No. 3, LSD 12, is rigging, with Union Drilling Co. handling the contract.

In Section 20-18-2w5, York Oils No. 2, LSD 6, is in the lower Benton formation below 5,506 feet.

In Section 17-18-2w5, Anglo-Canadian Oil Co. No. 4, LSD 6, is below 2,641 feet. Anglo-Canadian No. 6, LSD 3, is below 1,242 feet. Extension Royalties No. 2, LSD 11, is below 633 feet, with Drilling Contractors, Ltd., handling the contract.

In Section 9-18-2w5, George Harris and associates No. 1, LSD 13, is in the Benton formation below 5,120 feet.

West of the main crude area, Anglo-Canadian Oil Co. No. 5, LSD 8, Section 31-18-2w5, is below 4,605 feet. Scottish Petroleums No. 1, LSD 16, Section 19-18-2w5, is in the Benton formation below 5,640 feet. Royalite Oil Co. No. 38, LSD 16, Section 8-18-2w5, is in the Benton formation below 5,727 feet.

Northwest Turner Valley

Northwest of the Home No. 2 Millarville producer in North Turner Valley, and on the related Two Pine structure, several companies are getting ready to drill. Russell V. Johnson will select a location this month for the first test to be drilled in this area by National Petroleum Corp., which already has two producers in the South Turner Valley crude area with location for No. 3 in LSD 15, Section 32-18-2w5. Drilling will start some time in March. Officers of the company, recently reelected, are: President and managing director, Robert Wilkinson; vice president, George Harris; secretary-treasurer, W. G. Ledingham; director, W. Anderson.

East Crest Oil Co. has secured 2,360 acres on the Two Pine structure for a stock consideration, and has also secured some acreage slightly east of Home No. 2 Millarville. A test will probably be started this spring.

Mar Jon Oil Co. is planning to start work this spring on the southern extension of the Two Pine structure, in line with the strike of the North Turner Valley field. The company has around 1,800 acres including W half Section 17-22-4w5; E half Section 5 and W half Section 4-22-4w5; and acreage in Sections 21-21-4w5 and 27-21-4w5. Commitments call for spudding of No. 1 well before June 1. Derrick will be moved from the Frank D. Lundy test on the Birch Ridge structure.

Brown Oil Corp. Program

Following the return of R. A. Brown, Sr., and R. A. Brown, Jr., from a trip to Great Britain, Eastern Canada and the United States, the company has announced its drilling program for 1939. Three wells will be started early this spring on Turner Valley acreage with an additional three wells later in the year.

The 1939 program will also include two tests on Alberta structures outside Turner Valley, though it has not yet been determined which areas will be drilled. Financing has been arranged with British interests.

East Side Drilling

On the Twin Dome structure, northeast of Turner Valley, Anglo-Canadian Oil Co. No. 1, LSD 7, Section 16-21-28w4, is below 5,918 feet.

Northern Foothills

On the Brazeau structure, in the northern foothills west of Edmonton, Home Oil Co. No. 1, LSD 16, Section 7-43-17w5, is making new hole below 4,571 feet after a prolonged cementing and sidetracking job.

On the Clearwater structure, Altoba No. 1, Section 31-34-9w5, has resumed diamond drill test from 1,318 feet after testing a show of 39-gravity crude encountered between 1,196 and 1,286 feet.

On the Ram River structure west of Rocky Mountain House, Ram River Oils No. 1, Township 38-12w5, has resumed from 855 feet after a shutdown for bad weather.

Southern Foothills

On the Highwood-Sinclair structure, southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, Section 34-17-3w5, is deepening below 6,742 feet after installing new drilling line.

On the Savannah Creek structure

(Continued on Page 99)

NOVO

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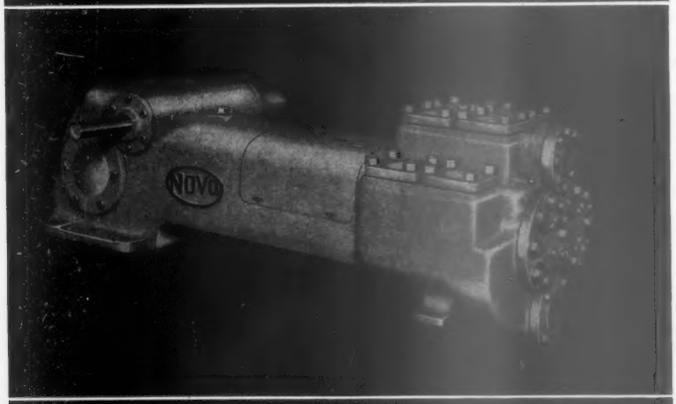
National SUPPLY COMPANY



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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Moore, E. H., No. 11 Sugar, Santa Maria Valley, S. B.	19-10-34	1,996	sd. sh. drlg.
Moore, E. H., No. 12 Sugar, Santa Maria Valley, S. B.	19-10-34	298	sd. sh. drlg.
Getty, G. F., No. 8 Vicente, Santa Maria Valley, S. B.	27-10-34	2,098	sd. sh. drlg.
Hogan Pet., No. 2 Zabala, Casmalia, Santa Barbara	33- 9-34	470	sd. sh. drlg.
Richfield Oil, No. 1 Tinaquaic, Foxen Can., S. B.	36- 9-32	4,302	sd. sh. drlg.
Barnsdall Oil, No. 5 Magenheimer, Gato Ridge, S. B.	9- 8-32	4,289	br. sh. drlg.
United West. Oil, No. 1 Los Olivos, Santa Barbara	16- 7-30	3,398	sd. sh. drlg.
Litho Oil, No. 1 R. I. E., Capitan, Santa Barbara	5- 4-30	430	sd. sh. drlg.
West. Oil Roy., No. 1 Bryce, Carpinteria, S. B.	29- 4-25	1,698	sd. sh. drlg.
Garvin & Seaman, No. 1 Gauthier, Summerland, S. B.	22- 4-26	1,458	fishing
Merchants Pet., No. 8 Hillside, Sespe, Ventura	1- 4-20	1,715	reaming
Ivers, H. A., No. 14 Kentuck, Sespe, Ventura	1- 4-20	900	completing
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	2,540	hd. sd. drlg.
El Rancho Oil, No. 2 Elkins, Shiells Canyon, Ventura	9- 3-19	3,138	O.S. drlg.
Continental Oil, No. 10 Grubb, San Miguelito, Vent.	24- 3-24	6,930	sd. sh. drlg.
C. C. M. Oil, No. 24-B Hobson, Rincon, Ventura	16- 3-24	4,660	flow 155 b.d.
Rincon Dev., No. 82-1 State, Rincon, Ventura	tideland	4,150	will redrl.
Tide Water A. O., No. 40 V.L.W., Vent. Ave., Vent.	25- 3-23	7,398	O.S. drlg.
Tide Water A. O., No. 14 McGonigle, Vent. Ave., Vent.	23- 3-23	5,162	sd. sh. drlg.
Tide Water A. O., No. 77 Lloyd, Vent. Ave., Vent.	27- 3-23	5,760	sd. sh. drlg.
Tide Water A. O., No. 123 Lloyd, Vent. Ave., Vent.	27- 3-23	5,575	sd. sh. drlg.
Tide Water A. O., No. 134 Lloyd, Vent. Ave., Vent.	27- 3-23	8,339	redrlg. 8,050
Tide Waetr A. O., No. 8 Hartman, Vent. Ave., Vent.	22- 3-23	5,050	sd. sh. drlg.
Shell Oil, No. 98 Taylor, Ventura Ave., Ventura	21- 3-23	5,326	fish D.P.
Shell Oil, No. 33 Edison, Ventura Ave., Ventura	28- 3-23	5,129	redrlg. 3,220
Brit. Amer. Oil, No. 7 Bolsa, Ventura Ave., Ventura	22- 3-23	6,770	redrlg. 6,590
Alliance Pet., No. 3 Hisey, Ventura Ave., Ventura	21- 3-23	4,951	sd. sh. drlg.
Lloyd Corp., No. 2 Dabney, Ventura Ave., Ventura	23- 3-23	8,170	sd. sh. drlg.
Cal. Expl. Co., No. 2 Occidental, Lost Hills, Kern	24-26-20	4,930	sd. sh. drlg.
Belridge Oil, No. 35-26-A, North Belridge, Kern	35-27-20	8,280	br. sh. drlg.
Belridge Oil, No. 26-25, North Belridge, Kern	26-27-20	8,500	cleaning out
Belridge Oil, No. 26-39, North Belridge, Kern	26-27-20	6,086	br. sh. drlg.
Belridge Oil, No. 28-2, North Belridge, Kern	28-27-20	8,315	O.S. drlg.
Tide Water A. O., No. 23-3, North Belridge, Kern	22-27-20	7,198	hd. sh. drlg.
Richfield Oil, No. 3, North Belridge, Kern	22-27-20	6,681	br. sh. drlg.
Amerada Pet., No. 6 Beer, Blackwells Corner, Kern	21-26-19	4,193	fish D.P.
Herzog, R. D., No. 1 Den, Devil's Den, Kern	27-25-18	507	sd. sh. drlg.
Dilamar Oil, No. 3 Quinn, Jasmin, Kern	15-25-27	430	sd. sh. drlg.
D. B. K. Co., No. 1 Kern, Kern River, Kern	34-28-28	469	sd. sh. drlg.
Helm & Smith, No. 12 Kern, Kern River, Kern	34-28-28	566	O.S. drlg.
Triad Oil, No. 1 A.H.S., Kern River, Kern	19-28-28	1,199	cleaning out
Shell Oil, No. 1 Glide, West Mount Poso, Kern	29-27-28	1,596	sd. sh. drlg.
Richfield Oil, No. 1 Union, Union Ave., Kern	5-30-28	9,860	sd. sh. drlg.
O'Reily, F., No. 1 Berree, Edison, Kern	5-30-29	4,130	sd. sh. drlg.
Oils, Inc., No. 1 Cauley, Edison, Kern	16-30-29	4,197	rig to pump
Standard Oil, No. 1 Jewett, Arvin, Kern	16-31-29	6,270	flow 1,150 b.d.
Texas Co., No. 35-1, KCL, Fruitvale, Kern	35-28-26	7,550	sd. sh. drlg.
Pacific Southwest Oil, No. 1 Dillon, Fruitvale, Kern	27-29-27	3,620	sd. sh. drlg.
Hillview Oil, No. 1 Tejon, Caliente Creek, Kern	11-30-30	2,662	hd. sd. drlg.
Continental Oil, No. 4-A, KCL, Wasco, Kern	8-27-24	12,570	hd. sh. drlg.
Standard Oil, No. 2 Mushrush, Wasco, Kern	7-27-24	11,965	hd. sh. drlg.
Standard Oil, No. 8-2-B, KCL, Wasco, Kern	17-27-24	8,851	hd. sh. drlg.
Cal. Lands, Inc., No. 1 Salisbury, Buttonwillow, Kern	7-29-24	11,506	cmtd. 11,472
General Pet., No. 3 Van Ness, Rio Bravo, Kern	2-29-25	11,421	sd. sh. drlg.
General Pet., No. 1 Caldwell, Rio Bravo, Kern	35-28-25	9,498	sd. sh. drlg.
Shell Oil, No. 23-2-A, KCL, Rosedale, Kern	2-29-26	7,650	sd. sh. drlg.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	11,590	C.P. 11,580
Standard Oil, No. 11-16, KCL, Greeley, Kern	20-29-26	10,380	gr. sh. drlg.
Standard Oil, No. 11-17, KCL, Greeley, Kern	18-29-26	8,473	gr. sh. drlg.
Standard Oil, No. 12-6, KCL, Greeley, Kern	30-29-26	8,195	hd. sh. drlg.
Standard Oil, No. 1 Elrich, Greeley, Kern	20-29-29	12,098	br. sh. drlg.
Superior Oil, No. 12, KCL, Greeley, Kern	3-30-26	12,635	sd. sh. drlg.
Shell Oil, No. 6-30-B, KCL, Ten Section, Kern	30-30-26	8,200	flow 3,586 b.d.
Shell Oil, No. 23-14-A, KCL, Canal, Kern	14-30-25	3,998	sd. sh. drlg.
Shell Oil, No. 87-4-B, KCL, Canal, Kern	4-30-25	11,784	sd. sh. drlg.
Ohio Oil, No. 10-E, KCL, Canal, Kern	14-30-25	8,325	tested wet
Richfield Oil, No. 52-32-A, KCL, Tupman, Kern	32-30-25	7,387	sd. sh. drlg.
Union Oil, No. 1-11, KCL, Coles Levee, Kern	11-31-25	8,590	sd. sh. drlg.
Standard Oil, No. 20-1, KCL, Coles Levee, Kern	9-31-25	7,750	sd. sh. drlg.
Ohio Oil, No. 2-F, KCL, Coles Levee, Kern	10-31-25	9,247	O.S. drlg.
Honolulu Oil, No. 5-A Vista, Midway-Sunset, Kern	14-32-24	3,024	cleaning out
Hoyt, Otis, No. 10 Sunset, Midway-Sunset, Kern	7-11-23	2,390	hd. sh. drlg.
Fried, Julius, No. 1 Fried, Midway-Sunset, Kern	34-32-24	5,035	redrlg. 4,949
National Oil, No. 32 Midway, Midway-Sunset, Kern	35-32-23	1,310	br. sh. drlg.
Texas Co., No. 33 Sunset, Midway-Sunset, Kern	32-32-24	1,932	sd. sh. drlg.
Standard Oil, No. 7-31 Western, McKittrick, Kern	7-30-22	2,240	O.S. drlg.
Westco Pet., No. 1 West, McKittrick, Kern	34-30-22	5,670	sd. sh. drlg.
Tide Water A. O., No. 2 S.P., Tejon Ranch, Kern	15-11-19	7,326	P.B. 6,790
Petrol Corp., No. 33-5 Reserve, Tejon Ranch, Kern	33-11-19	8,550	sd. sh. drlg.
Progressive Oil, No. 3, East Coalinga, Fresno	20-19-15	815	br. sh. drlg.
Foreign Oil, No. 6 Annex, W. Coalinga, Fresno	6-21-15	2,250	sd. sh. drlg.
Kolinga Ref., No. 2 Hill, W. Coalinga, Fresno	14-20-14	931	sd. sh. drlg.
Tyler & Cornwell, No. 4 Tyler, W. Coalinga, Fresno	14-20-14	193	sd. sh. drlg.
Ramsey, W. E., No. 2 Fearon, W. Coalinga, Fresno	18-20-15	4,835	will deepen
Jarvis, L. F., No. 2 Leo, W. Coalinga, Fresno	14-20-14	682	sd. sh. drlg.
Amerada Pet., No. 7-17 S.P.L., N. Coalinga, Fresno	17-19-16	6,626	sd. sh. drlg.
Petseahon, No. 31-7-F, S.E. Coalinga, Fresno	7-20-16	4,098	sd. sh. drlg.
Petseahon, No. 35-7-F, S.E. Coalinga, Fresno	7-20-16	6,150	hd. sh. drlg.
Petseahon, No. 22-18-F, S.E. Coalinga, Fresno	18-20-16	5,150	sd. sh. drlg.
Texas Co., No. 1 fee, S.E. Coalinga, Fresno	6-20-16	5,682	sd. sh. drlg.
Standard Oil, No. 71-13-C fee, S.E. Coalinga, Fresno	13-20-15	5,896	sd. sh. drlg.
Superior Oil, No. 3 fee, S.E. Coalinga, Fresno	7-20-16	7,080	br. sh. drlg.
Superior Oil, No. 4 fee, S.E. Coalinga, Fresno	7-20-16	6,571	sd. sh. drlg.
M. C. A. Drlg., No. 1 Adams, Kreyenhagen, Fresno	33-22-16	2,003	dry; abd.
K. N. D. A., No. 54-24-H, Kettleman North, Fresno	24-21-16	9,701	sd. sh. drlg.
K. N. D. A., No. 6-16-Q, Kettleman North, Kings	16-22-18	8,185	C.P. 7,925
K. N. D. A., No. 47-16-Q, Kettleman North, Kings	16-22-18	5,680	br. sh. drlg.
K. N. D. A., No. 36-18-Q, Kettleman North, Kings	18-22-18	6,791	br. sh. drlg.
K. N. D. A., No. 78-22-Q, Kettleman North, Kings	22-22-18	7,960	O.S. drlg.
Standard Oil, No. 56-1-P, Kettleman North, Kings	1-22-17	7,391	gr. sd. drlg.
Standard Oil, No. 76-7-Q, Kettleman North, Kings	7-22-18	7,090	gr. sd. drlg.
Standard Oil, No. 74-17-Q, Kettleman North, Kings	17-22-18	4,485	sd. sh. drlg.
Standard Oil, No. 81-19-Q, Kettleman North, Kings	19-22-18	4,260	sd. sh. drlg.
Standard Oil, No. 83-21-Q, Kettleman North, Kings	21-22-18	1,167	sd. sh. drlg.
Cal. Pet. Prod., No. 1 Irons, Cuyama, San Luis Obispo	19-10-24	1,830	will deepen
Newton, S. M., No. 1 Stafford, Panorama, S. L. Obispo	18-31-21	998	sd. sh. drlg.
Epco, Inc., No. 1 Ajax, Union, San Luis Obispo	27-26-13	4,360	sd. sh. drlg.
Page Pet., No. 1 Brint, Summit, San Luis Obispo	10-11-35	1,935	idle
Texas Co., No. 1 Arroyo Seco, Greenfield, Monterey	11-19- 5	499	sd. sh. drlg.
S. M. Oil, No. 1 Northern, Oakdale, Stanislaus	34- 1-10	2,418	idle
Amal. O. & G., No. 5 Konda, Richgrove, Tulare	23-24-27	110	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Antelope Valley Oil, No. 1 Palmdale, Los Angeles	17- 6-12	1,355	sd. sh. drlg.
Texas Co., No. 1 Anderson, Ocean Park, Los Angeles	17- 2-15	7,285	redrlg. 7,150
Rolling Hills Pet., No. 1 Weston, Palos Verdes, L. A.	27- 4-14	5,375	sd. sh. drlg.
Alford Oil, No. 12 Lomita, Torrance, Los Angeles	23- 4-14	5,179	flow 970 b.d.
Alford Dev. No. 31 Bell, Torrance, Los Angeles	23- 4-14	2,593	sd. sh. drlg.
Anderson Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	5,170	flow 530 b.d.
Cinco Oil, No. 1 Woodruff, Torrance, Los Angeles	23- 4-14	3,600	cleaning out
Conar, H. G., No. 1 Conrell, Torrance, Los Angeles	23- 4-14	4,280	sd. sh. drlg.
Campeet Oil, No. 17-A Kleinmyer, Torrance, L. A.	23- 4-14	3,856	fish tubing
Critton & Colvin, No. 1 Clark, Torrance, L. A.	23- 4-14	4,792	sd. sh. drlg.
Elliott, D. W., No. 10 Kettler, Torrance, Los Angeles	23- 4-14	4,597	sd. sh. drlg.
Hathaway Oil, No. 1 Meyers, Torrance, L. A.	23- 4-14	3,296	sd. sh. drlg.
Kern Pet., No. 1 Neher, Torrance, Los Angeles	23- 4-14	5,120	flow 315 b.d.
Kirk, W. A., No. 9 Lomita, Torrance, Los Angeles	23- 4-14	3,775	milling
Kilgore, S. H., No. 1 Mitchell, Torrance, L. A.	23- 4-14	3,980	will deepen
Maldum Pet., No. 5 Lomita, Torrance, L. A.	23- 4-14	5,165	flow 1,350 b.d.
McCaslin, W. E., No. 1 Springman, Torrance, L. A.	23- 4-14	5,170	flow 350 b.d.
Pacific West. Oil, No. 12 Marble, Torrance, L. A.	15- 4-14	4,990	sd. sh. drlg.
Pettijohn, J. E., No. 2 Marilou, Torrance, L. A.	23- 4-14	4,374	sd. sh. drlg.
Peters Roy. Corp., No. 1 Bass, Torrance, L. A.	23- 4-14	3,984	sd. sh. drlg.
Plymouth Oil, No. 2 Plymouth, Torrance, L. A.	23- 4-14	5,158	flow 340 b.d.
Rilling & Co., No. 1 H. & H., Torrance, L. A.	23- 4-14	3,980	redrlg. 3,550
Standard Oil, No. 1-11 Marble, Torrance, L. A.	23- 4-14	3,825	will deepen
Vesta Pet., No. 1 Bruhn, Torrance, Los Angeles	23- 4-14	2,992	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd, or Crd. cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill stem test.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., owell drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrk. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing)
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C., or W.O.C.S., waiting on cement to set.
W.O.O., waiting for orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Woolner Oil, No. 7 Lomita, Torrance, Los Angeles	23-	4-14	3,750	redrig. 3,683
Wilson, Ray, No. 3 Lomita, Torrance, Los Angeles	23-	4-14	3,287	sd. sh. drig.
Whit. S. F. S. Synd., No. 2 Lomita, Torrance, L. A.	23-	4-14	5,181	flow 1,075 b.d.
C. C. M. O. Co., No. 41, Torrance, Los Angeles	15-	4-14	3,980	sd. sh. drig.
C. C. M. O. Co. No. 51, Torrance, Los Angeles	14-	4-14	5,028	O.S. drig.
C. C. M. O. Co., No. 12 Kettler, Torrance, Los Angeles	14-	4-14	3,825	rigged up
General Pet., No. 13 Poggi, Harbor City, L. A.	30-	4-13	5,174	flow 310 b.d.
Texas Co., No. 3 Oakley, Harbor City, Los Angeles	30-	4-13	5,188	flow 285 b.d.
Union Oil, No. 25 Callender, Dominguez, L. A.	32-	3-13	4,616	sd. sh. drig.
Union Oil, No. 66 Callender, Dominguez, L. A.	33-	3-13	4,896	sd. sh. drig.
Union Oil, No. 49 Hellman, Dominguez, L. A.	33-	3-13	9,350	sd. sh. drig.
Shell Oil, No. 12 Reyes, Dominguez, Los Angeles	33-	3-13	4,170	cmtd, 3,912
Shell Oil, No. 97 Reyes, Dominguez, Los Angeles	33-	3-13	9,018	sd. sh. drig.
Barnsdall Oil, No. 12 Rosecrans, Rosecrans, L. A.	20-	3-13	6,540	sd. sh. drig.
Bankline Oil, No. 2 Kirby, Rosecrans, Los Angeles	20-	3-13	7,667	O.S. drig.
Metcalfe Oil, No. 1 Bradford, Rosecrans, L. A.	20-	3-13	5,098	sd. sh. drig.
Union Oil, No. 28 Rosecrans, Rosecrans, L. A.	19-	3-13	7,735	flow 755 b.d.
Universal Consd., No. 10 Trust, Rosecrans, L. A.	18-	3-13	7,590	sd. sh. drig.
Isco Pet., No. 2 Abel, Rosecrans, Los Angeles	19-	3-13	7,737	flow 740 b.d.
Superior Oil, No. 12 Maxwell, Rosecrans, L. A.	19-	3-13	7,696	pump 210 b.d.
Howard Oil, No. 1 H. O., Rosecrans, Los Angeles	20-	3-13	3,610	sd. sh. drig.
Basin Oil, No. 4 Club, Potrero, Los Angeles	34-	2-14	4,050	sd. sh. drig.
Barnsdall Oil, No. 5 R. S. F., Newhall, Los Angeles	26-	4-17	6,195	sd. sh. drig.
Standard Oil, No. 1 Ward, Aliso Canyon, L. A.	27-	3-16	1,855	hd. sh. drig.
Tide Water A. O., No. 2 Porter, Aliso Canyon, L. A.	27-	3-16	1,571	hd. sh. drig.
Union Oil, No. 1-27 Orcutt, Aliso Canyon, L. A.	27-	3-16	1,470	sd. sh. drig.
Mangrum & Page, No. 1 Lintz, Newhall, L. A.	4-	3-15	229	sd. sh. drig.
General Pet., No. 32 Harbor, Wilmington, L. A.	2-	5-13	4,060	flow 330 b.d.
General Pet., No. 34 Harbor, Wilmington, L. A.	2-	5-13	2,597	sd. sh. drig.
General Pet., No. 2 Patten, Wilmington, L. A.	2-	5-13	3,618	will redrl.
F. A. Pet., No. 1 Franco, Wilmington, L. A.	29-	4-13	3,725	sd. sh. drig.
Padreson Oil, No. 1 McClosky, Wilmington, L. A.	32-	4-13	3,662	O.S. drig.
Richfield Oil, No. 23 P.D., Wilmington, L. A.	2-	5-13	2,722	flow 395 b.d.
Royalty Sec. Corp., No. 8-A Nelson, Wilmington, L. A.	4-	5-13	4,694	sd. sh. drig.
Sonwell Oil, No. 5 Harbor, Wilmington, Los Angeles	2-	5-13	4,016	flow 500 b.d.
Signal O. & G., No. 1, L.B.-Allen, Wilmington, L. A.	2-	5-13	1,960	sd. sh. drig.
Signal O. & G., No. 1-D, L.B.-U.P., Wilmington, L. A.	3-	5-13	2,397	sd. sh. drig.
Signal O. & G., No. 2-D, L.B.-U.P., Wilmington, L. A.	3-	5-13	1,968	sd. sh. drig.
Union Pacific R. R., No. 102, Wilmington, L. A.	34-	4-13	2,940	sd. sh. drig.
Union Pacific R. R., No. 107, Wilmington, L. A.	3-	5-13	2,297	sd. sh. drig.
Union Pacific R. R., No. 108, Wilmington, L. A.	4-	5-13	2,186	sd. sh. drig.
Union Pacific R. R., No. 13-E, Wilmington, L. A.	34-	4-13	2,999	flow 256 b.d.
Universal Consd., No. 7 Newport, Wilmington, L. A.	2-	5-13	4,188	sd. sh. drig.
Grady, R. T., No. 1 Associates, San Pedro, L. A.	23-	5-14	614	cmtd. 415
Ridge Oil, No. 1 Club, Montebello, Los Angeles	3-	2-12	715	idle
Olympic Refining, No. 1 Smith, Montebello, L. A.	2-	2-12	7,136	cleaning out
St. Helens Pet., No. 30 Monterey, Montebello, L. A.	2-	2-12	6,692	O.S. drig.
St. Helens Pet., No. 4 Mulholland, Montebello, L. A.	2-	2-12	5,997	sd. sh. drig.
Standard Oil, No. 2 Braun, Montebello, L. A.	2-	2-12	6,694	O.S. drig.
Standard Oil, No. 5 Braun, Montebello, L. A.	2-	2-12	5,955	sd. sh. drig.
Standard Oil, No. 2 Kaufman, Montebello, L. A.	2-	2-12	6,665	sd. sh. drig.
Standard Oil, No. 2 Harvey, Montebello, L. A.	2-	2-12	5,996	sd. sh. drig.
Standard Oil, No. 4 Harvey, Montebello, L. A.	2-	2-12	6,673	sd. sh. drig.
Union Oil, No. 1 Calkins, Montebello, L. A.	2-	2-12	7,160	cleaning out
Union Oil, No. 4 Paul Howard, Montebello, L. A.	2-	2-12	6,694	sd. sh. drig.
Union Oil, No. 3 Wilcox, Montebello, Los Angeles	2-	2-12	6,699	sd. sh. drig.
Union Oil, No. 30 La Merced, Montebello, L. A.	1-	2-12	6,950	sd. sh. drig.
Stanley Oil, No. 1 Montebello, Montebello, L. A.	2-	2-12	4,890	redrig. 4,270
Pongratz Oil, No. 1 Newmark, Montebello, L. A.	3-	2-12	6,710	O.S. drig.
Texas Co., No. 5 Mulholland, Montebello, Los Angeles	2-	2-12	5,092	sd. sh. drig.
Herley-Kelly, Inc., No. 2 Burke, Montebello, L. A.	2-	2-12	6,803	O.S. drig.
H. & C. Oil, No. 1 Joyce, Whittier, Los Angeles	22-	2-11	3,360	idle
Texas Co., No. 1-13-A Smith, Anaheim, Orange	8-	4-10	8,250	sd. sh. drig.
Brea Canyon Oil, No. 49 Brea, Brea Canyon, Orange	2-	3-10	4,891	swabbing
Battersby, J. M., No. 1 Associates, Carmenita, Orange	21-	3-11	8,950	P.B. 7,500
Southwest Expl., No. 8 State, Hunt. Beach, Orange	4-	6-11	4,372	pump 285 b.d.
Southwest Expl., No. 9 State, Hunt. Beach, Orange	4-	6-11	2,163	sd. sh. drig.
Southwest Expl., No. 14 State, Hunt. Beach, Orange	10-	6-11	5,140	pump 450 b.d.
Dragon Oil, No. 1 Jauman, Huntington Beach, Orange	36-	5-11	4,625	O.S. drig.
Texas Co., No. 10 Brown, Huntington Beach, Orange	11-	6-11	3,675	sd. sh. drig.
Wilshire Oil, No. 2 H.B., Huntington Beach, Orange	10-	6-11	4,330	sd. sh. drig.
Wilshire Oil, No. 15 H.B., Huntington Beach, Orange	10-	6-11	4,362	test W.S.O.
Patos Drlg., No. 1 Graham, Sunset Beach, Orange	21-	5-11	5,396	hd. sh. drig.
Continental Oil, No. 41 Bixby, Seal Beach, Orange	11-	5-12	5,070	sd. sh. drig.

KANSAS

Week Ending February 25 (Descriptions are East unless marked otherwise)

Barber County

Barbara Oil Co. No. 1 Wilson, C SE Sec. 17-33-13. K.C. 4,097 ft.; drlg. 4,111 ft.
Olson Oil Co. No. 1 Coffman, C NW NE Sec. 25-31-12w. Drlg. 3,275 ft.

Barton County

Central Pet. and Vernon O. & G. No. 1 Miller, SE SW SE Sec. 17-16-13w. Drlg. 1,680 ft.
Gulf Oil No. 1 Louis, C N½ NW SW Sec. 2-20-12w. Arb. 3,347 ft.; S.S.O. 3,-373 ft.; 200 ft. O.I.H. in 10 hrs.; T.D. 3,375 ft.; C.O.
Long & Johnson No. 1 Eveleigh, SW SW NE Sec. 3-18-14w. Lans. 3,100 ft.; Arb. 3,338 ft.; T.D. 3,367 ft.; P. 66 B. O. in 8 hrs.; pot. 197 B.O.
Paul Martin No. 1-A Feltes, NW SW SE Sec. 8-16-12w. Drlg. 2,450 ft.
I. W. Murfin No. 1 Birzer, NE SW Sec. 21-19-11w. S.S.O. 2,995-3,000 ft.; drlg. 3,030 ft.

Butler County

Bowland & McCoy No. 1 Frankson, SE SW Sec. 2-29-6. S.D. 165 ft.
Hay, Hall & Table-Mesa Oil Co. No. 1 Ferrell, SW NW NE Sec. 28-28-8. Drlg. 1,515 ft.

Cowley County

Ben Gralapp et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. T.D. 3,248 ft.; P.B. 3,000 ft.
Mead Bros. No. 1 Julian, NE SE NW Sec. 16-33-3. Drlg. 2,300 ft.
Phillips Pet. Co. No. 1 Bernard, SE SE NE Sec. 19-33-6. Fsg. bit 3,073 ft.

Dickinson County

Franks et al No. 1 Huffman, NW NW SW Sec. 11-13-1. Drlg. 1,960 ft.; (last report).

Ellis County

Bridgeport No. 1 Froelich, CWL SW Sec. 34-12-16w. Drlg. 2,858 ft.
Darby Pet. No. 1 Peavey, NW NW NE Sec. 24-11-18w. T.D. 3,456 ft.; swb. 110 B.O. in 15 hrs.

Graham County

Continental Oil Co. No. 1 Drumm Comm. Co., SE SE NE Sec. 16-9-21w. Lans. 3,390 ft.; Arb. 3,679-94 ft.; T.D. 3,702 ft.; pmp. 149 B.O. in 8½ hrs.; to acdz.
Continental Oil Co. No. 1 Putnam Inv. Co., CWL SW Sec. 3-9-21w. Drlg. 3,-050 ft.

Greenwood County

Hancock et al No. 1 Rousch, C S½ SE NW Sec. 8-28-13. T.D. 1,530 ft.; S.D.

Leavenworth County

John Hardaway No. 1 Scheller, SW SE SW Sec. 30-10-22. S.D. 345 ft.

McPherson County

Marylyn Oil No. 1 Dixon, NW NE NW Sec. 7-19-2w. T.D. 3,018 ft.; acd.; P.& F. 36 B.O. in 24 hrs.
Phillips Pet. Co. No. 1 Esau, CEL W½ NE Sec. 7-21-4w. Drlg. 1,916 ft.
Sinclair Prairie No. 1 Martins, CWL SW Sec. 20-21-3w. B.R.R.

Marion County

Johnson et al No. 1-A Miltz, SW SW SW Sec. 24-17-4. T.D. 2,485 ft.; shot and C.O.; H.F.W.
Vickers Pet. No. 1 Sutphin, SW SE SW Sec. 30-22-4. Drlg. 2,492 ft.

Mead County

Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,435 ft.

Osage County

J. M. Edwards No. 1 Detrick (O.W.D.D.), C NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; S.D. 1,200 ft.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. Miss. 2,835 ft.; H.F.W. 3,302-10 ft.; S.D. for csg. 3,480 ft.

Pratt County

Champlin Ref. Co. No. 1 Elliott, SW NE Sec. 26-27-14w. Fsg. 4,857 ft.

Reno County

Barnsdall Oil Co. No. 1 Krehbiel, NE NE NE Sec. 18-25-5w. Lans. 2,735 ft.; Vla. 3,832 ft.; Simp. 3,863 ft.; drlg. 3,868 ft.

Rice County

McPherson Drlg. Co. No. 1 Cramm, SE SE SW Sec. 15-19-9w. Drlg.
Spurrier & Bruce No. 1 Cary, NE NW NW Sec. 30-18-8w. O.W.D.D.; O.T.D. 1,530 ft.; S.D. 1,680 ft.

Rooks County

Broadview Oil No. 1 Beardsmore, NW SE SW Sec. 2-9-16w. Drlg. 535 ft.
Phillips Pet. Co. No. 1 Tanzey, C NW SW Sec. 25-8-18w. Arb. 3,418-3,423 ft.; T.D. 3,424 ft.; acd. and swb. 21 B.F.

Russell County

Central Pet. No. 1 Karst, SE NW NE Sec. 21-15-13w. T.D. 425 ft.; rng. csg.
Phil-Han No. 1 Weimeister, SW Sec. 13-14-13w. Top pay 2,655 ft.; perf. and acd. and swb. ½ B.O.P.H.; to P.B.
R H. Shields No. 1-A Gross, CSL SW SE Sec. 5-15-13w. Lans. 2,929 ft.; T.D. 2,-976 ft.; P.B. 2,900 ft.; acdz.

Saline County

Central States Oil Co. No. 1 Crawford, NW SW NE Sec. 26-13-3w. Drlg. 1,100 ft.

Sedgwick County

Century Pet. Co. No. 1 Wilke, SW SE SW Sec. 1-29-2. S.D. 700 ft.

Frank Hudson et al No. 1 Fulton, NE SE Sec. 35-28-1e. S.D. 2,356 ft.

Shawnee County

W. M. McKnab No. 1 Fritz, SW SE NW Sec. 4-12-14. Drlg. 1,600 ft.

Stafford County

Continental Oil No. 1 Russell, SW SW NE Sec. 13-25-13w. Arb. 4,024 ft.; 3,450 ft. O.I.H.; drlg. 4,041 ft.
Stanolind O. & G. Co. No. 1 Curtis, SE cor. Sec. 31-21-12w. Viola 3,544 ft.; Arb. 3,638 ft.; R.U.S.T. 3,640 ft.
Virginia Drlg. Co. No. 1 Schlockter-meyer, SE NW Sec. 7-21-11w. Arb. 3,-347 ft.; S.S.O. 3,469 ft.; 600 ft. F.I.H. at 3,463 ft.

Wabaunsee County

Scheu & Tague et al No. 1 Aye, NW SW NW Sec. 10-12-8. S.D. 488 ft.

Woodson County

Roby et al No. 1 Meairs, SW SW NW Sec. 21-25-14. S.D. 400 ft.
M. J. Trott No. 1 Abbott, NW NE NE Sec. 21-25-14e. Drlg. 1,325 ft.

NEBRASKA

Pawnee County

Blazer & McClure et al No. 1 Allen, NW NE SW Sec. 16-1n-10e. Bart. sd. 40 ft.; Miss. L. 149 ft.; Arb. 789 ft.; T.D. 801 ft.; lost hole and shot off csg.; P.B. to 450 ft.; 100 gal. acd. and 1,000 gal. acd.; C.O.

Richardson County

H. C. Stephens and E. Uhri No. 1 Harlow, C SE NE Sec. 32-1n-13e. O.W.D. D.; S.D. 780 ft.

Hitchcock County

C. L. Price No. 1 Carter, SE NE SW Sec. 35-2n-32w. Drlg. 2,300 ft.

Adams County

Prunty Prod. Co. No. 1 Katzburg, 2 mi. S of Hastings; 4,000-ft. test. Lans. 2,680 ft.; Simp. 3,820 ft.; Arb. 3,886 ft.; T.D. 4,005 ft.; D.&A.

OKLAHOMA

Week Ending February 25

NORTHERN OKLAHOMA

Atoka County

Giblett No. 1 Rich, SE SE SW Sec. 2-1-12. W.O.C. 704 ft.

Caddo County

Texas Co. No. 1 Smith, C NE NW Sec. 2-5-12w. T.D. 2,556 ft.; S.D.O.

Cleveland County

Burke-Greis No. 1 Alberts, SE SW NW Sec. 19-7-1w. Hunton 6,885 ft.; Viola 7,320 ft.; Dense 7,390 ft.; 2nd Wlx. 7,-710-35 ft., T.D.; ran Schlm.; D.&A.
English Drlg. Co. No. 1 Rice, C NE NE Sec. 3-10-2w. Drlg. 960 ft.
Harper, Turner et al No. 1 Taylor, SE NE NW Sec. 23-8-2w. Woodford 7,090 ft.; Vla. 7,620 ft.; drlg. 7,641 ft.
Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.; perf. 7,525-40 ft. in sd.; swbg. F., mostly wtr.

Comanche County

Ker-Lyn Oil Co. No. 1 Laging, C NE SW Sec. 30-4-9w. Drlg. 3,530 ft.
Mid Night Oil No. 1 Howe, NW NW NE Sec. 30-2-13w. O.W.D.D.; O.T.D. 703 ft.; drlg. 773 ft.
Ed Parsons No. 1 Stephens, C NW SW Sec. 29-4-9w. Drlg. 200 ft.

Garfield County

Champlin Ref. Co. No. 1 Allen, SE SE SE Sec. 26-24-8w. W.O.C. 6,385 ft.
Hughes Drlg. Co. No. 1 Meisner, C NE NW Sec. 10-20-4w. Vla. 5,705 ft.; 1st Wlx. 5,823-65 ft.; T.D. 5,871 ft.; C.O.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE Sec. 22-1n-1e. 3,218,000 cu. ft. gas; drlg. 3,205 ft.; S.D.; repairs.
Ker-Lyn Oil Co. No. 1 Butterly, NE NE SE Sec. 22-1-1. O.W.D.D.; O.T.D. 3,-205 ft.; to D.D.

Grady County

Carter Oil Co. et al No. 1 Smith C-58, C SE SW Sec. 26-5-8w. S.S.O. 5,329-58 ft.; S.O. 5,433 ft.; cd. 5,964-76 ft.; rec. sh.; cd. 6,351-76 ft.; rec. hd. sd.; T.D. 6,613 ft.; set 9-in. csg. 6,602 ft.; W. O.C.
Ed Parsons No. 1 McKenney, SE SE SW Sec. 30-3-8w. S.D. tools.

Hughes County

Skelton et al No. 1 Gilmore, C N½ NE SE Sec. 7-5-9. Drlg. 492 ft.

Kay County

Cooper Drlg. Co. No. 1 Caughlin, SE NE SW Sec. 30-25-1. Drlg. 135 ft.
Crawford No. 1 Boehl, SE SE NW Sec. 34-27-2w. T.D. 1,040 ft.; fsg.
C. C. Nye No. 1 Wolfenbarger, SW NW SW Sec. 16-27-4. T.D. 3,201 ft., sd.
Kaw Oil Co. No. 1 Wolfenberger, NW NW SE Sec. 9-27-4. T.D. 60 ft.; S.D.; rprs.

Kingfisher County

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Drlg. 6,590 ft.

Kiowa County

C. J. Hagerling No. 1 Kimray, SW SW NW Sec. 36-5-18w. T.D. 500 ft.; recvd. bit and S.D.

Lincoln County

Fields & Nagle No. 1 Black, SE SE SE Sec. 31-16-6; O.W.D.D. T.D. 3,980 ft.; P. 40 B.O. in 24 hrs.; 10% wtr.; comp.

Muskogee County

Heydrick No. 1 Paschall, NE SE NW Sec. 22-13-19. S.D. 1,446 ft.

Okfuskee County

Carter & Hight No. 1 Rogers, SW SW SW Sec. 6-13-8. T.D. 2,850 ft.; P.B. 2,-510 ft.; W.O.C.
I. T. I. O. No. 1 Palmer, NE SE NW Sec. 5-10-9. Drlg. 1,455 ft.

Oklahoma County

E M. Eldridge No. 1 White, C NE NE Sec. 30-11-1. Drlg. 3,310 ft.

Okmulgee County

Jim Wise Drlg. Co. No. 1 Morrow, SW NW NE Sec. 16-15-13. 3,000,000 cu. ft. gas 1,930-38 ft.; decreased to 1,000,000 cu. ft. at 1,985 ft.; T.D. 1,985 ft.; S.D.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. T.D. 1,780 ft.; S.D.

Payne County

Comail Oil Co. No. 1 Curran, SE SE SE Sec. 21-19-6. Wlx. 3,546-3,606 ft., T.D.; H.F.W.; D.&A.
Starr O. & G. Co. No. 1 Georgia, SE SW NE Sec. 35-18-4. 1st Wlx. 4,051 ft.; 2d 4,083 ft.; T.D. 4,123 ft.; Skinner sd. 3,463-93 ft.; P.B. 3,494 ft.; est. 2,000,-000 cu. ft. gas; tstg.

Pittsburg County

Phillips Pet. Co. No. 1 Hubacker, C NW NE Sec. 11-7-5. Drlg. 4,812 ft.

Pontotoc County

H. Z. Moore No. 1 Payne, SE NW SE Sec. 16-4-4. T.D. 997 ft.; S.S.O.; abd.
Union Dev. Co. No. 1-A Abbott, SW NW NE Sec. 34-3-6. S.D. 4,100 ft.
L. Walker No. 1 King, SW SE NW Sec. 5-4-7. Drlg. 390 ft.

Pottawatomie County

Grimes et al No. 1 Dye, NW NW SE Sec. 2-5-5. Wlx. 3,355 ft.; T.D. 3,379 ft.; ran Schlm. and S.D.O.
J. E. Trigg No. 1 Truesdell, SW SW SE Sec. 21-7-5. Drlg. 2,240 ft.
Wood Oil Co. No. 1 Peters, SW SE NW Sec. 28-8-4. Wlx. 3,540 ft.; dolo. 4,365 ft.; swb. 84 B.O. in 16 hrs.; P.O.P.

Seminole County

Atlantic Ref. Co. No. 1 Atkinson, NW

NW SW Sec. 17-6-6. **Misener 3,697 ft.;** Viola 3,718 ft.; T.D. 4,023 ft.; P.B. 3,-819 ft.; drld. out to 3,839 ft.; acdz. and S. 127 B.O. and 90 B.W. in 15 hrs.

Atlantic Ref. Co. No. 1 Jimmey, SE NW NE Sec. 21-7-6. Loc.

Lesslie Rogers No. 1 Kidd, NE SW SE Sec. 33-10-8. T.D. 200 ft.; abd.

H. S. Moss No. 1 Leachman, C N½ SE NE Sec. 34-10-6. Woodford 4,252 ft.; Hunton 4,303 ft.; cd. 4,304-14 ft.; rec. S.S.O.; drlg. 4,625 ft.

W. C. Wood No. 1 Aldridge, SW NW NE Sec. 5-8-8. T.D. 1,910 ft.; H.F.W.; S. D.O.

Sequoyah County

Thompson Brs. No. 1 Ruby, NW NW NE Sec. 30-12-22. Drlg. 970 ft.; (last report).

Stephens County

Phillips Pet. Co. No. 1 Culbertson, NW NW SE Sec. 4-1-5w. Drlg. 4,576 ft.

Texas County

Republic Nat. Gas Co. No. 1 Dulabohn, C Sec. 21-6n-15ecm. Drlg. 2,365 ft.

Republic Nat. Gas Co. No. 1 Judd, CSL SW Sec. 24-6n-15ecm. T.D. 2,870 ft.; gas 7,100,000 cu. ft.

Washita County

Continental Oil Co. No. 1 Proctor C NW Sec. 28-10-20w. T.D. 10,195 ft.; rmg. 10,490 ft.

L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,190 ft.; S.D.

SOUTHERN OKLAHOMA

Carter County

Pure Oil Co. No. 1 Noble, NE SE Sec. 35-3s-1e. Woodford 4,289 ft.; Hunton 4,638 ft.; Vla. 5,014 ft.; drlg. 5,415 ft.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. S.D. 1,406 ft.

Jefferson County

H. W. Weir No. 1 Carmichael, NE NE SW Sec. 23-7s-7w. W.O.C. 102 ft.

Marshall County

Hughes et al No. 1 Vittitto, C NE SE Sec. 11-5s-4e. O.W.D.D.; O.T.D. 7,100 ft.; S.D.O.

Murray County

A. G. Carter No. 1 Vensonite, 1,170 ft. W and 150 ft. S, Sec. 34-1s-2e. S.S.O.; drlg. 1,188 ft.

Tillman County

Smith No. 2 Hammel, NE NW NW Sec. 6-5s-15w. T.D. 2,380 ft.; recd. D.P. and S.D.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Ark. La. Gas Co. No. 2 Gayoso, 660 ft. SW cor. SE Sec. 14-16-10. T. Tr. Pk. 5,432 ft.; D.S.T. 5,796-5,805 ft.; tstd. dry in 26 min.; set 8⅝-in. csg. 6,300 ft.; T.D. 6,324 ft.; W.O.C.

Bossier Parish

Premier Inv. Co. No. 1 McDade, SE SW NE Sec. 28-19-11. T.D. 2,384 ft.; acd. with 1,000 gal.; csg. seat gave away; hole full S.W.; 5½-in. csg. 2,342 ft.; pmpg. 5 B.O.P.D. and 25 bbls. S.W.; fsg. for C.T. 2,472 ft.

Caddo Parish

P. T. Alexander No. 1 fee, NE cor. SE Sec. 1-20-16. Comp.; 60 B.P.D.; used 3,000 gal. acd.; T.D. 1,542 ft.

Rhoda Armstrong No. 2 Henderson, SW cor. Sec. 27-22-16. Cg. 2,505 ft.

Claude Bagley No. 1 Crystal fee, NE SW Sec. 24-21-16. Set 6-in. csg. 996 ft.; T.D. 1,003 ft.; tstd. S.W.; S.D.; W.O.

R. L. Bauman No. 1 Dorian, SE cor. NE Sec. 34-18-14. Por. L. 5,569-75 ft. and 5,581-88 ft.; set 5-in. csg. 5,596 ft.; T. D. 5,599 ft.; drlg. plug.

Beckett & Key No. 1 M. C. Stallcup, SE cor. NE NW Sec. 34-22-16. Set 10-in. 103 ft.; drlg. sh. 1,600 ft.

Mose Browning and E. D. Holcomb, Jr., No. 1 Henderson, SW cor. Sec. 27-22-16. Oil sd. 2,495-2,504 ft.; 7-in. csg. 2,-489 ft.; swbg. oil and S.W.

J. M. Buckler No. 2 Stiles, NE cor. Sec. 17-21-16. To set csg. 1,000 ft.

Burnham Drlg. Co. No. 1 Gray, 330 ft. S and E, C Sec. 34-22-16. 12½-in. csg. 100 ft.; set 5½-in. csg. 2,481 ft.; perf. and swbd. dry at 2,472-76 ft. and 2,468-74 ft.; tstd. S.W. in perf. 2,451-54 ft.; T. sd. (cor.) 2,471-77 ft.; drld. to 2,495 ft.; no sd.; P.B. 2,250 ft. and perf. 2,-095-99 ft.; tstd. S.W.; abd.

Carney et al No. 3 Hart, SE NW Sec. 21-21-16. Set 8-in. csg. 1,563 ft.; tstd. S.O.; acdzd. with 3,000 gal.; tstd. dry; S.D.; W.O. 1,839 ft.

Cryer & Davis No. 1 Crystal fee, S and W, C Sec. 25-21-16. 10-in. csg. 70 ft.; oil sd. 2,274-76 ft.; T.D. 2,276 ft.; S.D.; W.O.

W. C. Feazel No. 1 Hunter, SW cor. Sec. 23-18-14. R.U.

Claude Ferguson No. 5 Lawhon, NW cor. Sec. 7-24-15. Set 7-in. csg. 1,374 ft.

Harry Fotiades No. 1 Tomlinson, C NE NW Sec. 35-18-14. Set 10¾-in. csg. 1,-500 ft.; drlg. 2,153 ft.

Don George No. 1 Henderson, SW cor. Sec. 27-22-16. R.U.; S.D.

H. C. Prod. Co. No. 1 Kinnebrew & Ratcliff, NE cor. Sec. 5-19-16. D.S.T. 2,-253 ft.; S.W.; 7-in. csg. 1,497 ft.; P.B. 1,680 ft.; O.T.D. 2,253 ft.; acdzd. with 2,000 gal; O.&S.W. in hole; W.O. 1,-680 ft.

Harry Hanbury No. 1 Sample, C SW SE Sec. 23-18-14. Por. L. 5,554-60 ft.; set 5½-in. csg. 5,552 ft.; T.D., sh. 5,566 ft.; comp.; 610 B.P.D.; 10/64-in. ck.; T.P. 330 lbs.; C.P. 775 lbs.

A. R. Hancock No. 4 Helpman, Sec. 16-21-16. Set 7-in. csg. 998 ft.

A. R. Hancock No. 6 Helpman, NW SE Sec. 16-21-16. Set 6⅝-in. csg. 996 ft.

Hurricane Pet. Corp. No. 1-C Chandler, C SW SE Sec. 34-18-14. Jnkd. at 1,256 ft.; skd. over and began second hole; drlg. sh.&L. 3,951 ft.

Johnston, Flanigan & Williams No. 1 Henderson, SE SW Sec. 27-22-16. D.S. T. 2,495-2,504 ft.; tstd. S.W.; W.O. 2,-514 ft.

C. M. Jones No. 1 Henderson, SW cor. Sec. 27-22-16. Drlg. sh. 2,326 ft.

Wm. C. Leink No. 1 Sinclair, NW SE Sec. 26-18-14. 13⅜-in. csg. 294 ft.; drlg. anhy. 4,620 ft.

Ben Levy No. 1 Crystal fee, SW cor. Sec. 25-21-16. Set 6-in. 1,350 ft.; tstd. dry 1,650 ft.; drlg. sh. 2,140 ft.

C. D. Loe No. 1 Meyer, SE cor. Sec. 33-18-14. T. Pettit 5,592 ft.; O.T.D. 5,631 ft.; swbd. O.&S.W.; resqzd. all perf. and set plug 5,605 ft.; tstd. dry; re-perf. 5,592-5,602 ft. and ripped csg. 5,-592-5,602 ft.; swbg. to test small S.O. 5,602 ft.

Magnolia Pet. Co. No. 6 Caddo Lv. Bd., NW cor. Sec. 7-20-15. Set 7-in. csg. 1,-335 ft.; used 3,000 gal. acd.; tstg.; T.D. 1,565 ft.; comp.; pmpg. 10 B.P.D.

F. W. Martin Co. No. 1 Browning, NE cor. Sec. 33-22-16. Set 5½-in. csg. 2,-462 ft.; tstd. S.W.; good S.O.; P.B. 2,-459 ft.; tstg.

Oblinger & Ritter No. 1 Boisseau, SE cor. Sec. 34-21-16. R.U. and S.D.

S. H. Riggs and C. C. Gilger No. 1 Browning, SE cor. NW SW Sec. 27-22-16. D.S.T. 2,495-2,504 ft.; rec. S.W.; D.&A.

S. H. Riggs and C. C. Gilger No. 1 W. D. Browning, NW cor. NE SW Sec. 27-22-16. R.U. and S.D.

J. O. Whittington No. 1 Grayson, C SE SE Sec. 30-19-15. Set 9⅝-in. csg. 2,-200 ft.; T. Massive anhy. 4,434 ft.; base 4,695 ft.; drlg. sh.&L. 5,320 ft.

Claiborne Parish

E. T. Oakes et al No. 2 Kilgore, C NW SE Sec. 28-21-5. Hd. to slightly por. L. 5,294-5,303 ft.; 5½-in. csg. 5,287 ft.; acdzd. with 5,000 gal.; tstg. 5,324 ft.

De Soto Parish

S. S. Alexander No. 1-A Stoll, Sec. 5-12-16. Set 7-in. csg. 2,705 ft.; acd. with 3,000 gal. and tstd. est. 2,000,000 cu.ft. gas; 400 lbs.; D.S.T. 2,984-3,046 ft.; tstg. 165 ft. mud cut with oil, 35 min.; set short string 5-in. csg. on bttm.; T.D. 3,145 ft.; perf. 3,000-44 ft.; 2,500 ft.; flwd. 3 days, est. 10 B.P.D. and went dead; W.O.S.R. 3,050 ft.

Grant Parish

J. E. Granstaff No. 1 Erwin, NE cor. SE Sec. 9-9-1e. 10-in. csg. 80 ft.; T. sd. 1,526 ft.; will set csg. 1,532 ft.

K. M. Oil Co. No. 2 Holmes, NW cor. SE NW Sec. 20-9-1e. Cg. 1,608 ft.

La Salle Parish

Placid Oil Co. No. 7 La. Central Lbr. Co., 270 ft. SL, 96 ft. WL, Sec. 13-10-4e. Set 10-in. csg. 90 ft.; drlg. sh. 1,-900 ft.

Stovall Drlg. Co. No. 4-B Russell, NW cor. Sec. 25-10-1e. S.D. 1,054 ft.; high wtr.

G. C. Walsenham No. 1 Dean, NW cor. SE Sec. 23-9-1e. 6-in. csg. 1,595 ft.; tstd. S.W.; S.O.; sd. 1,602-05 ft.; T.D. 1,654 ft.; comp.; pmpg. 5 B.P.D. oil and considerable S.W.

G. C. Walsenham No. 2 Dean, NE cor. SE Sec. 23-9-1e. Drlg. sh. 1,647 ft.

Natchitoches Parish

Jack Lent et al No. 1 Whatley, SW cor. Sec. 17-10-10. S.O.&G. reported at 1,-490-1,516 ft.; T.D. 1,516 ft.; D.S.T. 1,-470-56 ft.; tstd. dry in 20 min.; did not set csg.; D.S.T. 2,069-96 ft.; rec. 180 ft. mud and sl.; S.O. and 900 ft. S.W. in 15 min.; cd. sh. 3,462-72 ft.; drlg. hd. L. 3,492 ft.

Red River Parish

H. B. Schumacher No. 1 Crichton, SW cor. NW Sec. 18-13-10. Set 8-in. csg. 1,065 ft.; tstd. S.S.O.; S.D. 1,450 ft.

D. J. Simmons et al No. 1 Richardson, NE cor. Sec. 24-13-11. Set 5½-in. csg. 2,-500 ft.; tstd. S.S.O.; arng. dpn. 2,517 ft.

Sabine Parish

Geo. Ellis No. 1 Walker, 500 ft. NW cor. NW SE Sec. 8-4-12. Set 12½-in. csg. 276 ft.; W.O.C.

A. B. House No. 1 Sabine, NW NW Sec. 23-7-14. 8-in. csg. 2,134 ft.; used 7,000 gal. acd.; tstd. dry; cond. mud 3,642 ft.; arng. set 7-in. 3,500 ft.; T.D. 3,642 ft.

D. N. Jolley No. 1 Summers, C SW NE Sec. 14-7-13. Drlg. 50 ft.

Major Oil Co. No. 1 Long Bell, SW cor. SW SE Sec. 1-7-18. 7-in. csg. 2,142 ft.; tstg. 2,584 ft.

Sutton Zwolle Oil Co. No. 2 Bowman Hicks, NW cor. SW NW Sec. 6-7-13. Drlg. sh.&bldrs. 1,325 ft.

Sutton Zwolle Oil Co. No. 2 Sabine, NW cor. NE NW Sec. 23-7-14. T. chk. 2,-128 ft.; b. chk. rk. 2,670 ft.; D.&A. 3,-939 ft.

Voline Oil Co. No. 1 Sabine, NE cor. NW NW Sec. 23-7-14. Reported S.O. in sdy. L. 3,760-3,805 ft.; set 6⅝-in. csg. 3,760 ft.; T.D. 3,805 ft.; tstd. dry 3,805 ft.; S.W. broke in; believe csg. seat gave way; tstd. formation 3,805-3,976 ft.; dry; W.O. 3,976 ft.

Tensas Parish

H. V. Schumacher No. 4 Mound Plantation, Sec. 29-11-12e. S.D. 3,002 ft.

Webster Parish

R. L. Fisher et al No. 1 S. P. D. Coyle, 660 ft. N and 1,880 ft. E of SW cor. Sec. 23-21-10. Holly. sd. 5,544-59 ft. and 5,809-16 ft.; set 5½-in. csg. 5,782 ft.; T.D. 5,998 ft.; tstd. S.G.; swbd. S.O.& G.; plg. tbg. and will perf. 5,992 ft.

Hunt Oil Co. No. 4 Bodcaw-Stewart, 2,-155 ft. N and 660 ft. E. SW cor. Sec. 34-21-10. Holly. sd. 5,321-47 ft.; set 9⅝-in. csg. 5,302 ft.; tstd. S.O.&G. in Holly sd.; drlg. sh.&sd. 7,819 ft.

Hunt Oil Co. No. 5 Bodcaw-Stewart, NW cor. NE Sec. 33-21-10. Hollwy. sd. 5,-734-63 ft. and 5,885-95 ft., oil; set 9⅝-in. csg. 5,938 ft.; drlg. sh. 6,141 ft.

Hunt Oil Co. and Stanolind O. & G. Co. No. 1 Coffee-Webster Inv. Co. Unit, C NE NW Sec. 36-31-10. 13⅜-in. csg. 677 ft.; no Holly. sd.; set 9⅝-in. csg. 5,-780 ft.; drlg. sh. 8,039 ft.

Hunt Oil Co. No. 6 Webb, C NE SE Sec. 14-21-10. Set 13⅜-in. csg. 628 ft.; T.D. 640 ft.; W.O.C.

Hassie Hunt No. 11 Davis, C SE SW Sec. 13-21-10. R.U.

Magnolia Pet. Co. No. 4 Branton, NE cor. Sec. 6-22-9. 9⅝-in. csg. 5,933 ft.; T. lower Marine 7,750 ft.; T. Bodcaw sd. 8,193 ft.; T. Davis 8,442 ft.; show some heavy oil at 8,450 ft.; set 7-in. csg. 9,137 ft.; T. Sexton sd. 9,155 ft.; cg. 9,179 ft.; set 2½-in. tbg. on pkr. 9,-037 ft. and tstd. 56 bbls. dist. in 15 hrs.; ⅝-in. ck.; ga. 832,000 cu. ft. gas; T.P. 300 lbs.; T.D. 9,203 ft.; pkr. gave away.

Magnolia Pet. Co. No. 1 Cox, C NW SW Sec. 15-21-10. Set 13⅜-in. csg. 847 ft.; 9⅝-in. csg. 5,868 ft.; drlg. 7,006 ft.

Magnolia Pet. Co. and Ohio Oil Co. No. 1 Coyle-Hodges Unit, SW cor. NW Sec. 21-21-10. Drlg. sh. 6,117 ft.

Magnolia Pet. Co. No. 1 Roseberry Unit, 20 ft. N and W, C SE Sec. 29-23-9. Set 13⅜-in. csg. 887 ft.; T. Pettit L. 5,725 ft.; S.O. 5,764-66 ft.; T. Tr. Pk. 5,900 ft.; set 9⅝-in. csg. 5,962 ft.; T. lwr. Marine 7,350 ft.; T. Bdcw. sd. 8,289 ft., S.W.; drlg. sh. 8,526 ft.

Midstates Oil Corp. No. 1 Giddens, 100 ft. NW cor. SW SW Sec. 30-21-9. Set 13-in. csg. 100 ft.; W.O.C.

Ohio Oil Co. No. 1 Merritt, NE cor. Sec. 14-21-10. Set 13⅜-in. csg. 806 ft.; drlg. sdy. sh. 5,082 ft.

Oliphant Oil Corp. No. 1-A Hodges, C NW NE Sec. 3-20-10. Top Tr. Pk. 5,995 ft.; no Holl. sd.; set 9⅝-in. csg. 5,610 ft.; T. lwr. Marine 8,090 ft.; "D" sd. 8,488-8,516 ft. (oil); T.D. 8,643 ft.; rmg. down to set csg.

Stanolind O. & G. Co. and W. Delaney No. 1 Pardee-Coffee Unit, C NE Sec. 36-21-10. T. Tr. Pk. 5,932 ft.; no Holloway sd.; set 9⅝-in. csg. 5,955 ft.; drlg. sh. 8,392 ft.

Union Prod. Co. No. 1 Walker Unit, 50 ft. S, C SE Sec. 30-18-8. Set 9⅝-in. csg. 6,490 ft.; T. Pettit 6,685 ft.; T. Tr. Pk. 6,910 ft.; fsg. twisted D.S. 7,837 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drk.

Bancroft—Beauregard Parish

Republic Prod. Co. No. 6 Columbia Ld. & Tbr. Co., Sec. 15-6s-13w. R.U.

Republic Prod. Co. No. 4 Lutcher Moore Lbr. Co., Sec. 15-6s-18w. Drk.

Republic Prod. Co. No. 5 Lutcher Moore Lbr. Co., Sec. 15-6s-13w. T.D. 7,394 ft.; 7-in. csg. 7,394 ft.; perf. csg. 7,343-48 ft.; tstg.

Republic Prod. Co. No. 1 Louis Whitman, Sec. 15-6s-13w. T.D. 7,344 ft.; P.B.; sdtrkd.; drlg. sh. 7,344 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 2 State-Bateman Lake, Sec. 21-16s-12e. R.U.

Texas Co. No. 2 Wax Bayou Co., Sec. 21-16s-12e. M.I. drlg. barge.

Baton Rouge—East Baton Rouge Parish

Geo. Helis et al No. 1 McInnis, Sec. 36-8s-1w. Loc.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 2 L.L.&E., Bay St. Elaine, Sec. 18-22s-18e. T.D. 6,500 ft.; 9⅝-in. csg. 6,020 ft.; no report.

Texas Co. No. 2-B State-Bay, Sec. 13-22s-17e. 9⅝-in. csg. 6,512 ft.; T.D. 6,682 ft.; sdy. sh.; O.S.; no report.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 1 Wilbert & Sons Lbr. Co., Sec. 74-9s-10e. T.D. 1,-869 ft.; tstd. S.W.; abd.

Humble O. & R. Co. No. 11 Wilberts, Sec. 67-9s-11e. Loc.

Bayou Choctaw—West Baton Rouge

La. Crusader No. 5 Schwing, Sec. 29-8s-11e. 9⅝-in. csg. 2,250 ft.; T.D. 4,755 ft.; P.B. 4,200 ft.; sdtrkd. 4,214 ft.; T.D. 7,878 ft.; P.B. 7,530 ft.; stk. D.S. P.B. 5,800 ft.; sdtrkd.; T.D. 5,890 ft.; P.B. 5,200 ft.; drlg. sh. 8,200 ft.

La. Crusader No. 6 Schwing, Sec. 29-8s-11e. Drlg. sh. 7,960 ft.

Bayou des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 3 St. Charles Ld. Co., Sec. 13-15s-20e. Drlg. sh. 7,-482 ft.

Amerada Pet. Corp. No. 4 St. Charles Ld. Co., Sec. 13-15s-2e. Loc.

Caillou Island—Terrebonne Parish

Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. T.D. 2,465 ft.; 13⅜-in. csg. 2,465 ft.; T.D. 6,564 ft.; P.B.; sdtrkd.; drlg. sd.&L. 6,347 ft.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 5 Dibert, Stark & Brown Cypress Co., Sec. 70-16s-15e. 16-in. csg. 110 ft.; 10¾-in. csg. 1,865 ft.; T.D. 6,-055 ft.; stk. D.S.

Sun Oil Co. No. 4 Delbert Stark and Brown Cypress Co., Sec. 70-15s-15e. T.D. 7,794 ft.; P.B. 6,764 ft.; sdtrkd.; drlg. sh. 7,212 ft.

Chalkley Field—Cameron Parish

Humble O. & R. Co. No. 2 Cameron Par. Sch. Ld., Sec. 16-12s-6w. Bldg. drk.

Charenton—St. Mary Parish

Commerce Oil Co. No. 1 T. Brulation, Sec. 19-13s-10e. Loc.

Edwards & Aber No. 2 Blanchard, Sec. 21-13s-9e. T.D. 1,148 ft.; 5½-in. csg. 1,141 ft.; tstd. S.W.; P.B. 1,132 ft.; perf. csg. 1,125-32 ft.; W.O.S.R.

Kinsley Oil, Inc., No. 1-B Hertel, Sec. 30-13s-9e. Loc.

Pan American Prod. Co. No. 1 Achee, Sec. 21-13s-9e. Loc.

Pan American Prod. Co. No. 4-B Eucer, Sec. 25-13s-9e. T.D. 3,012 ft.; abd.

Pan American Prod. Co. No. 12 Laws Realty Co., Sec. 36-13s-9e. R.U.

J. P. Scranton No. 1 State Bayou, Sec. 30-13s-10e. Drlg. sh. 1,873 ft.

Convent—St. James Parish

Continental Oil Co. No. 2 Realty Operators, Inc., Sec. 16. 13⅜-in. csg. 1,-492 ft.; T.D. 7,889 ft.; P.B. 7,275 ft.; sdtrkd. 7,305 ft.; cg. sh. 8,203 ft.

Creole—Cameron Parish

Superior Oil Co. No. 5 State-Gulf of Mexico, Sec. 4-15s-8w. T.D. 4,253 ft.; P.B.; sdtrkd.; drlg. sh.&sd. 5,684 ft.

Darrow—Ascension Parish

Humble O. & R. Co. No. 15 Gumbel, Sec. 33-10s-2e. Loc.

Humble O. & R. Co. No. 2 Rose, Sec. 33-10s-2e. T.D. 6,096 ft.; make D.S.T.

Kiva Oil Co. No. 1 Duplessis, Sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 22 State, Sec. 5-22s-16e. 13⅜-in. csg. 2,030 ft.; 7-in. csg. 6,901 ft.; T.D. 7,014 ft.; salt; P.B. 6,950 ft.; W.O.C. no report.

Edgerly Field—Calcasieu Parish

R. H. Kean et al No. 1 M. J. Muller et al, Sec. 29-9s-11w. 7-in. csg. 2,804 ft.; bailed S.W.; S.D. 3,050 ft.; T.A.

Eola—Avoyelles Parish

J. E. Jones No. 1 Haas Inv. Co., Sec. 8-2s-3e. Loc.

Pomo Prod. Co. No. 1 S. W. Sentel, Sec. 5-2s-3e. R.U.

Sid Richardson No. 2 Haas Inv. Co., Sec. 7-2s-3e. T.D. 1,428 ft.; 10¾-in. csg. 1,-428 ft.; drlg. sh. 6,820 ft.

Sid Richardson No. 3 Haas Inv. Co., Sec. 7-2s-3e. Drlg. sh. 4,220 ft.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. Drlg. sh.&sd. 10,735 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 31 State, Sec. 28-23s-33e. T.D. 6,915 ft.; 7-in. csg. 6,915 ft.; no report.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 1 Green Heres, Sec. 11-9s-8w. Drlg. sh. 2,792 ft.

Union Sulphur Co. No. 8 Kaufman, Sec. 7-9s-8w. Drk.

Golden Meadows—La Fourche Parish

Martex Pet. Corp. No. 1 Falgout Holding Co., Inc., Sec. 9-19s-22e. R.U.

Grand Bay—Plaquemines Parish

Gulf Oil Corp. No. 25-A Erwin, Sec. 13-12s-10w. Drk.

Gulf Oil Corp. No. 4 Grand Prairie Lve. Dist., Sec. 48-20s-18e. Loc.

Gulf Oil Corp. No. 2 State, Sec. 6-20s-19e. Loc.

Gueydan—Acadia Parish

A. M. Barbe No. 1 G. L. Humble, Sec. 27-11s-1w. T.D. 8,695 ft.; perf. csg. 4,-490-96 ft.; tstd. S.W.; P.B. 4,504 ft.; abd.

Hackberry—Cameron Parish

F. W. Bennett No. 1 Bickford, Sec. 37-

12s-10w. T.D. 7,037 ft.; 7-in. csg. 7,037 ft.

Gulf Ref. Co. No. 25-A Erwin, Sec. 13-12s-10w. Cg. sdy. sh.&L. 3,563 ft.

Superior Oil Co. No. 2-C Kaough, Sec. 30-12s-10w. Drlg. sd.&sh. 3,591 ft.

Union Sulphur Co. No. 12 Doiron, Sec. 37-12s-10w. Drlg. sdy. sh. 5,268 ft.

Union Sulphur Co. No. 13 Doiron, Sec. 37-12s-10w. Drlg. sh. 2,080 ft.

Union Sulphur Co. No. 1 Josephine O'Quinn, Sec. 37-12s-10w. Drk.

Union Sulphur Co. No. 45 Watkins, Sec. 13-12s-10w. T.D. 3,203 ft.; P.B. 1,400 ft.; W.O.C.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, Sec. 37-17s-9e 9⅝-in. csg. 11,631 ft.; T.D. 12,770 ft.; set 1,659 ft. of 6⅝-in. csg. at 12,645 ft.; lost D.S.; fsg.

Jefferson Island—Iberia Parish

Texas Co. No. 2 Jefferson Island, Sec. 58-12-5e. 18⅝-in. csg. 40 ft.; cg. sdy. L. 7,934 ft.

Texas Co. No. 2 State-Lake Peigneur, Twp. 12s-5w. Drlg. sd. 2,501 ft.

Jennings—Acadia Parish

W. T. Burton No. 6 Roboria, Sec. 41-9s-2w. 7-in. csg. 6,721 ft.; fsg. tbg.; T.D. 6,997 ft.; sdtrkd. at 6,118 ft.; drld. to 6,178 ft.; sdtrkd. at 6,023 ft.; T.D. 6,732 ft.; trying to drill by fish; P.B. 6,104 ft.; W.O.C.; sdtrkd. 6,020 ft.; T.D. 6,056 ft.; 7-in. csg. 2,203 ft. and 10¾-in. csg. 2,108 ft.; sdtrkd.; drld into old hole; P.B.; sdtrkd. 2,302 ft.; T.D. 6,763 ft.; run csg.

Glassell & Glassell No. 5 McFarlain, Sec. 41-9s-2w. Drlg. sh.&L. 6,288 ft.

Glassell & Glassell No. 6 McFarlain, Sec. 41-9s-2w. Drlg. sh. 7,034 ft.

L. & L. Oil Co. No. 4 Houssiere Latreille, Sec. 47-9s-2w. 7-in. csg. 1,817 ft.; T.D. 1,881 ft.; P.B. 1,848 ft.; drld. out 1,848 ft.; sanded up; C.O.

Shell Pet. Corp. No. 1 Prather. Cg. sd. 7,257 ft.

Stanolind O. & G. Co. No. 114 Crowley Oil & Mineral Co., Sec. 48-9s-2w. R.U.

Superior Oil Co. No. 16 Wm. Leckelt, Sec. 42-9s-2w. T.D. 8,304 ft.; 7-in. csg. 8,304 ft.; perf. csg. 8,204-29 ft.; I.P. 311 B.P.D.; 12/64-in. ck.

Lafitte—Jefferson Parish

Texas Co. No. 2 State-Bayou Norman, Sec. 21-17s-24e. Loc.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 2 H. J. Ellender, Sec. 32-19s-19e. Drlg. sh. 9,970 ft.

Lake Long—La Fourche Parish

Fohs Oil Co. No. 7 State-Lake Long, Twp. 17s-19e. 18⅝-in. csg. 295 ft.; T. D. 10,248 ft.; 7-in. csg. 9,928 ft.; P.B. 9,875 ft.; perf. csg. 9,862-68 ft.; tstd. 780 lbs. press.; recvd. 270 ft. drlg. mud, cut with gas; perf. csg. 9,876-9,882 ft.; recvd. 30 ft. of gas-cut mud; sqzd. off perf.; perf. csg. 9,200-08 ft.; tstd. S.W.; perf. csg. 9,197-9,202 ft.; rec. 65 stands drlg. mud, S.W., trace of oil; 92 lbs. press.; sqzd. off perf.; perf. csg. 9,816-19 ft.; tstg.

New Iberia—Iberia Parish

Canal Oil Co. No. 5 Sabatier, Sec. 54-12s-7e. T.D. 2,504 ft.; 7-in. csg. 2,491 ft.; I.P. 150 B.P.D.; ¼-in. ck.

Wm. Helis No. 8 Bullock, Sec. 25-12s-7e. Drlg. sh. 4,335 ft.

Wm. Helis No. 5 Schwing, Sec. 56-12s-7e. T.D. 4,954 ft.; P.B. 4,188 ft.; W.O.C.

Lisbon-Iberia Oil Corp. No. 7 Gulf fee, Sec. 25-12s-7e. Drlg. sd.&grvl. 249 ft.

Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.

Texas Co. No. 1 DeCuir, Sec. 25-12s-7e. Drlg. sh.&L. 4,465 ft.

Texas Co. No. 2 Gonsoulin, Sec. 13-12s-7e. Drlg. sdy. sh. 7,458 ft.

Texas Co. No. 2-A Hanzon, Sec. 54-12s-7e. Drlg. sh.&L. 7,775 ft.

Texas Co. No. 3-B Hanszen, Sec. 54-12s-7e. 7-in. csg. 6,838 ft.; T.D. 7,133 ft.; salt; P.B. 7,073 ft.; tstg.

Texas Co. No. 1 Renaudet et al, Sec. 71-12s-7e. Drlg. sd.&L. 8,175 ft.

North Tepetate—Acadia Parish

Atlantic Ref. Co. No. 4 Klumpp, Sec. 12-7s-2w. Drlg. sh. 5,633 ft.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 1 Rene Nezat. Drlg. sd. 4,821 ft.

Y. D. Spill No. 1 Gaudet, Sec. 4-6s-5e. S.D. 4,700 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 38 Orleans Lve. Dist., Sec. 13-18s-15e. Drk.

Western Gulf Prod. Co. No. 1 Paseale, Sec. 6-18s-27e. Loc.

Western Gulf Prod. Co. No. 1-A Treadway, Sec. 6-18s-27e. Loc.; (cor.).

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 1-A Plaquemines Ld. Co., Sec. 18-19s-17e. R.U.

Gulf Ref. Co. No. 5 State, Sec. 17-19s-17e. Loc.

Gulf Oil Corp. No. 9 State QQ, Sec. 18-19s-17e. Loc.

South Houma—Terrebonne Parish

Shell Pet. Corp. No. 2 Peters. Drlg. sd. 9,889 ft.

Raceland—La Fourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; T.A.

Amerada Pet. Corp. et al No. 2 Godchaux, Sec. 34-15s-19e. Drlg. sdy. sh. 10,420 ft.

Tide Water Asso. Oil Co. No. 2-A South Coast Corp., Sec. 34-15s-19e. Dredge canal.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 2 Sturdivant, Sec. 36-10s-4w. Drlg. sh.&L. 7,942 ft.

St. Martinsville—St. Martin Parish

Continental Oil Co. No. 1 Standard of Kans., Sec. 13-10s-6e. Cd. sd.&sh., oil odor 5,866-76 ft.; T.D. 8,018 ft.; S.D.

Timbalier Bay—La Fourche Parish

Gulf Oil Corp. No. 4 State. T.D. 7,268 ft.; sdtrkd.; T.D. 5,323 ft.; 5-in. csg. 5,320 ft.; comp.; no ga.

Valentine—La Fourche Parish

Pan American Prod. Co. No. 19 Harang, Sec. 8-17s-20e. R.U.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 Crise Deville, Sec. 26-3s-2e. Drlg. sh. 2,823 ft.

Continental Oil Co. No. 1 Fontenot-Deshotels, Sec. 44-3s-2e. Drlg. sh. 9,020 ft.

Continental Oil Co. No. 3 Opelousas-St. Landry Securities Co., Sec. 44-3s-2e. R.U.

Continental Oil Co. No. 1 Rene McDaniel, Sec. 45-3s-2e. Drk.

Continental Oil Co. No. 1 Tate, Sec. 45-3s-2e. Drlg. sh. 7,086 ft.

Continental Oil Co. No. 2 Vidrine, Sec. 34-3s-2e. Drlg. sh. 8,965 ft.

Continental Oil Co. No. 3 Vidrine, Deville, Sec. 46-3s-2e. Drlg. sh. 1,284 ft.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 4 Calcasieu Natl. Bnk., Sec. 12-9s-6w. Drlg. sh.&L. 7,752 ft.

Union Sulphur Co. No. 2 Osmon, Sec. 7 9s-5w. T.D. 9,111 ft.; P.B. 5,910 ft.

S. LOUISIANA WILDCATS

Acadia Parish

T. T. Tolson et al No. 1 J. Turner, Sec. 25-7s-1e. M.I.M.

Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. Drk.

Assumption Parish

Humble O. & R. Co. No. 1 Milliken & Farewell Co., Inc., Sec. 79-14s-14e. 13⅜-in. csg. 2,978 ft.; drlg. 11,516 ft.

Calcasieu Parish

David B. MacDaniel No. 2 Sch. Ld., Sec. 16-9s-7w. 15½-in. csg. 46 ft.; 10¾-in. csg. 1,299 ft.; T.D. 7,890 ft.; S.D.

Cameron Parish

Humble O. & R. Co. No. 1 Cameron Parish Sch. Ld., Sec. 16-12s-6w. T.D. 9,101 ft.; 7-in. csg. 9,087 ft.; perf. csg. 8,949-59 ft.; I.P. 460 bbls. in 22 hrs.; ⅜-in. ck.; grav. 38.

Superior Oil Co. No. 2 John Sells, Sec. 4-15s-8w. R.U.

Superior Oil Co. et al No. 1 State, Grand Lake, Sec. 24-13s-4w. Driving piling.

Iberia Parish

Texas Co. No. 1 Petit Anse, Sec. 59-13s-6e. Cg. sh. 7,835 ft.

Texas Co. No. 3-B State-Vermilion Bay, Twp. 16s-5e. Drlg. sh. 1,369 ft.

Texas Co. No. 2-B Vermilion Bay, Twp. 16s-5e. T.D. 9,667 ft.; cleaned hole with reversing tool to 6,381 ft.; twisted off D.S.; T.A.

Iberville Parish

California Co. No. 1 Schwing Lbr. Co., Sec. 96-10s-10e. 20-in. csg. 177 ft.; 9⅝-in. csg. T.D. 10,106 ft.; twisted off drill collar; P.B. to sdtrk.

Humble O. & R. Co. No. 1 Iberville Mortgage Loan Co., Inc., Sec. 74-7s-10e. R.U.

Shell Pet. Corp. No. 1 Natalbany Lbr. Co., Sec. 18-9s-2e. Drlg. sh. 6,837 ft.

La Fourche Parish

Gulf Oil Corp. No. 1 Grandison Ld. Co., Sec. 14-20s-23e. M.I.M.

Texas Co. No. 1 L.L.&E. Golden Meadows, Sec. 77-19s-21e. Drlg. sd.&sh. 10,549 ft.

Texas Co. No. 1 State-Catfish Lake, Sec. 77-19s-21e. 18⅝-in. csg. 90 ft.; T.D. 8,205 ft.; D.S. stk.; P.B. 5,783 ft.; sdtrkd.; drlg. sd.&sh. 9,955 ft.

Orleans Parish

W. T. Burton No. 1 L.&N.R.R., Sec. 18-11s-15e. Drlg. sd.&sh. 4,412 ft.

W. T. Burton No. 3 L.&N.R.R., Sec. 25-11s-14e. Loc.

W. T. Burton No. 1-B R. E. E. de Montluzin, Sec. 1-10s-13e. Drk.

W. T. Burton No. 1 State-Lake Pontchartrain, Twp. 10s-13e. T.D. 8,367 ft.; P.B. 7,775 ft.; sdtrkd. at 7,959 ft.; T. D. 8,165 ft.; 9⅝-in. csg. 8,165 ft.; T.D. 8,241 ft.; tstd. S.W.; D.S.T. 8,135-8,241 ft.; T.D. 11,149 ft.; cutting and pulling stk. D.S.; S.D.

Plaquemines Parish

Texas Co. No. 1 L.L.&E., Bastian Bay, Sec. 43-20s-28e. Drlg. sd.&sh. 9,412 ft.

Rapides Parish

Gulf States Explin. No. 1 Erwin & Bishop, Sec. 35-1n-3w. Loc.

St. Bernard Parish

Gulf Ref. Co. No. 4-State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; T.D. 10,632 ft.; rmg. at 9,698 ft.

Wm. Helis et al No. 1 Mereaux Munez, Sec. 34-12s-12e. T.D. 9,634 ft.; P.B. to sdtrk. at 9,370 ft.

Vendome Pet. Corp. No. 1 Kenilworth Plantation, Sec. 59-13s-14e. Drlg. sh. 10,665 ft.

St. Charles Parish

Texas Co. No. 1 L.L.&E. Paradis, Sec 39-14s-20e. 9⅝-in. csg. 8,975 ft.; drlg. sh. 9,242 ft.

St. James Parish

Shell Pet. Corp. No. 1 Shexnayder, Sec. 38-12s-15e. 9⅝-in. csg. 8,534 ft.; cg. sh. 10,136 ft.

St. Martin Parish

Magnolia Pet. Co. No. 1 Mercelin, Sec. 8-10s-7e. Drlg. sh.&shls. 5,120 ft.

Texas Co. No. 11 St. Martin Ld. Co., Sec. 21-8s-7e. Top salt 8,904 ft.; T.D 9,404 ft.; 7-in. csg. 8,912 ft.; P.B. 7,175 ft.; drld. out to bttm.; P.B. 8,080 ft.; perf. csg. 8,060-70 ft.; tstd. mud, gas and S.W.; sqzd. off perf.; perf. csg. 8,060-65 ft.; tstd. 38 stands oil and gas showing fresh wtr.; set screen and lnr.; pmpg.; showing est. 25 B.O.; 7 lnr.; lowered tbg. to 6,987 ft.; pmpg. and swbg. making est. 120 bbls. net oil per day with 57% S.W.; tstg.; plld. rods and tbg.; set cmt. plug 7,630-7,812 ft.; perf. csg. 7,700-12 ft., 7,295-7,303 ft., and 7,260-67 ft.; tstd. S.W.; S.D.; abd.

St. Mary Parish

Phillips Pet. Co. No. 1 Whitney Natl. Bnk., Sec. 13-15s-12e. T.D. 6,942 ft.; fsg.

St. Tammany Parish

A. P. Portas No. 1 W. C. Forbes, Sec. 33-7s-15e. Drk.

Terrebonne Parish

Texas Co. No. 2 State-Coon Point, Twp. 23s-14e. 13⅜-in. csg. 1,900 ft.; T.D. 2,851 ft.; driving piling.

ARKANSAS

Columbia County

Atlantic Ref. Co. No. 1 A. S. Crisp, NW cor. NW NE Sec. 23-17-20. Fsg. bit 5,500 ft.

Atlantic Ref. Co. No. 1-B Garrett, C NW NW Sec. 24-17-20. Set 16-in. csg. 130 ft.; drlg. rd.&gr. sh. 4,265 ft.

W. L. Goldston No. 1 A. C. Garrett, C SE SW Sec. 13-17-20. Set 16-in. 134 ft.; 10¾-in. csg. 2,227 ft.; cd. por. L. gas odor 7,374-94 ft.; T. Rey. L. 7,372 ft.; T. sat. 7,463 ft.; cd. 7,490-7,510 ft.; por. sat. ool. L.; set 7-in. csg. 7,500 ft.; to test; T.D. 7,510 ft.; comp.; 390 B.P.D.; 12/64-in. ck.; T.P. 1,350 ft.

Normandie Oil Co. No. 1-B L. Garrett, C NE SW Sec. 13-17-20. Set 16-in. csg. 120 ft.; drlg. 1,956 ft.

Alice Sydney Oil Co. No. 1 Crisp, Sec. 23-17-20. 16-in. csg. 127 ft.; drlg. rd.& gr. sh. 6,236 ft.

Southwood Oil Co., Inc., No. 1 J. O. Hutcheson, C NE SW Sec. 14-17-20. Por. oolitic L. 7,500-53 ft.; T. Rey. L. 7,497 ft.; T. sat. L. 7,502 ft.; cd. 7,553-65 ft.; por. sat. ool. L.; set 7-in. csg. 7,545 ft.; comp.; 302 B.P.D.; 12/64-in. ck.; T.P. 1,300 lbs.; C.P. 1,400 lbs.; T. D. 7,565 ft.

Southwood Oil Co., Inc., No. 2 J. O. Hutcheson, C SE SW Sec. 14-17-20. 16-in. csg. 135 ft.; drlg. rd.&gr. sh. 6,150 ft.

Standard Oil Co. of La. No. 1 Lewis Unit, SE cor. NW NE Sec. 15-17-19. T. L. 7,364 ft.; cd. por. L. 7,398-7,428 ft.; T. por. L. 7,394 ft.; 6-in. csg. 7,437 ft.; drld. plug to 7,439 ft.; comp.; 12 B.P.H.; 5/32-in. ck.; C.P. 2,075 lbs.; T. P. 1,425 lbs.

Craighead County

Tannark, Inc., No. 1 Ruby M. Martin, 580 ft. NL, 80 ft. EL, Sec. 35-14n-3e. Fsg. for bit 1,735 ft.

Hot Spring County

John H. James No. 1 Sturgess Lbr. Co., SW cor. SW SE Sec. 24-6-18. 10-in. csg. 58 ft.; cd. hd. dense gr. L. 964-78 ft.; S.D., cor. T.D. 1,048 ft.

Lafayette County

Shell Pet. Corp. and Ohio Oil Co. No. 1 Warren, C SE SE Sec. 13-16-24. 13⅜-in. 194 ft.; 9⅝-in. 2,272 ft.; T. Bknr. 6,920 ft.; D.S.T. 7,169-7,228 ft.; shwd. S.W. and oil; tstg.; set 7-in. csg. 7,169 ft.; T. L. 7,165 ft.; T. por. L. 7,173 ft.; wtr. contact 7,186 ft.; T.D. 7,225 ft.; acdzd. with 3,000 gal.; swbd. S.W.; S.S.G.; S.D.; W.O. 7,284 ft.; P.B. 7,168 ft.; drld. out 7,177 ft. and U.R. 10-in. hole; used 1,000 gal. acd. and swbd. 310 bbls. S.W.; S.S.O.&G.; swbd. down 7,177 ft.; D.&A.

Wadley-Erwin et al No. 1 G. W. Taylor, C NE SW Sec. 15-19-26. 13⅜-in. csg. 447 ft.; T. anhy. (cor.) 5,312 ft.; T. Hill 5,855 ft.; T. Gloyd 5,992 ft.; por. Gl. 6,071-76 ft. (S.W.); Dees sd. 6,114-17 ft. (tight); T. Young 6,154 ft.; T. Pett. L. 6,657 ft.; T. Tr. Pk. 6,753 ft.; D.& A. 6,802 ft.

Little River County

C. & M. Drlg. Co. No. 1 Strawn, SW cor. SE Sec. 20-10-32. Cd. 1,270-80 ft.; sh.& wtr. sd.; reported S.O. 1,365-70 ft.; drlg. rd. sh. 1,402 ft.

Joe G. Strahan et al No. 2 Dierks Lbr. Co., Sec. 21-12-28. S.D. for D.S. 3,797 ft.

Lonoke County

Lonoke-Prairie Dev. Co. No. 1 T. Young, C NW NW Sec. 8-3n-7w. Hole clean; U.R. 8¼-in. csg. 236 ft.; T.D. 300 ft., sd.; S.D.

W. L. Tedford No. 1 Anderson, 8-in. 400 ft.; arng. run 5-in. csg. on pkr. to S.O. wtr. flw.; prep. run 5-in. csg. to shut off wtr., 950 ft.

Miller County—Rodessa

Berkshire Oil Co. No. 2 Watson, NE SE Sec. 2-20-28. Drlg. anhy. 5,752 ft.

Gerhig Co. No. 4 Mitchell, SE SW Sec. 2-20-28. Sat. L. 6,177-6,202 ft.; set 5½-in. csg. 6,173 ft.; tstg.

Gerhig Co. No. 2 Watson, NE cor. N SE Sec. 2-20-28. Sat. L. 6,229-35 ft.; set 5½-in. csg. 6,227 ft.; comp.; 25 B.P.H.; ¼-in. ck.; T.D. 6,235 ft.

Gulf Ref. Co. No. 5 Johnson, SW cor. Sec. 2-20-28. Drlg. anhy.&sh. 5,629 ft.

Lyons & Merritt No. 1 Matlock, SE cor. Sec. 2-20-28. Sat. L. 6,166-90 ft.; 5½-in. csg. 6,169 ft.; tstg.

Mississippi County

Benedum & Trees Oil Co. No. 1 Mack, 330 ft. SW cor. NW SW Sec. 2-15n-12e. Top Nac. 2,160 ft.; set 7-in. csg. 2,897 ft.; drlg. gr. L. 4,209 ft.

Nevada County

Webb & Franks No. 1 P. T. Grayson, SW cor. NW SE Sec. 4-14-20. Tokio sd.; D.S.T. 2,098-2,102 ft.; 10 min.; rec. 200 ft. oil and mud; open ck.; set 7-in. csg. 2,099 ft.; T.D. 2,102 ft.; drld. plug; 250 ft. F.I.H.; W.O.S.R.

Ouachita County

Deep Rock Oil Corp. No. 1 C. Wesson, SE cor. NE Sec. 23-15-19. Set 13-in. csg. 350 ft.; cd. T. C. V. 4,305 ft.; T. Buckner 5,700 ft.; T. Smkvr. 5,923 ft.; por. L. 5,934 ft.; drld. 6,003-54 ft.; set 5½-in. csg. 6,038 ft.; T. plug 5,998 ft.; bld. csg. dry; perf. 5,930-50 ft.; tstd. S.W. and S.S. of 27.5-grav. oil; D.&A.; T.D. 6,053 ft.

Union County—Schuler

E. M. Jones No. 2 J. C. Morgan, SE cor. NE NW Sec. 13-18-18. T. Jones sd. 7,571 ft.; T.D. 7,647 ft.; set 7-in. csg. 7,636 ft.; perf. 7,582-7,611 ft.; comp.; 160 B.P.D.; 10/64-in. ck.; T.P. 700 lbs.; C. P. 250 lbs.; T.D. 7,647 ft.

Lion Oil Ref. Co. No. 2 Henry, C N SE SE Sec. 12-18-18. Set 16-in. csg. 115 ft.; 10¾-in. csg. 1,920 ft.; drlg. rd.&gr. sh. 4,450 ft.

Roberts & Murphy No. 3 Leona, NW cor. Lot 6, SW Sec. 7-18-17. T. Jones sd. 7,511 ft.; cd. T. L. 7,675 ft.; set 7-in. csg. 7,750 ft.; T.D. 7,775 ft.

Union County—Other

Mullins & Brooks et al No. 1 Nash, 500 ft. N and 338 ft. W of SE cor. NW SE Sec. 7-17-13. 10-in. csg. 148 ft.; D.S.T. 3,037-52 ft.; rec. 250 ft. oil and 30 ft. S.W.; 14-min.; W.P. 4 lbs.; top pay 3,232 ft.; 5½-in. 3,100 ft.; drld. out to 3,089 ft.; perf. 3,022-44 ft.; tstd. S.S.O.&G. and S.W.; reperf. 3,020-44 ft.; swbd. 100 B.P.D. for 3 days; D.& A. 3,232 ft.

Mullins & Brooks et al No. 2 Nash, C NW SE Sec. 7-17-13. Tstd. mud and S.D. 3,151-70 ft.; cd. por. sat. sd. 3,070-89 ft.; tstd. S.W.

Sklar Oil Corp. No. 10 Murphy, SW NE Sec. 9-16-15. Sat. sd. 2,338-61 ft. (Meakin); set 7-in. csg. 2,385 ft.

Sloan Wells, Tr., No. 4 G. J. Childs, 150 ft. NW cor. NE SW Sec. 8-16-16. O.W. W.O.; O.T.D. 2,656 ft.; fsg. 2,656 ft.

Snuggs Sebersky & Bylick No. 1 J. N. Jerry, NE cor. SE SW Sec. 21-17-14. Cd. S.W. sd. 2,818-21 ft.; S.D.; W.O.

TEXAS

Week Ending February 25

GULF COAST FIELDS

Hastings Field—Brazoria County

Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 3 Armstrong Plantation, Polley & Chance Sur. Cg. 10,336 ft.

Harrison & Abercrombie No. 5 Arm-

strong, Polly & Chance Sur. Drlg. sh. &L. 4,820 ft.
Harrison & Abercrombie No. 6 Bernard River Ld. & Dev. Co., C. Breen Sur. Drlg. sh.&L. 6,212 ft.
Harrison & Abercrombie No. 1 Lola Buck, Polly & Chance Sur. T.D. 10,445 ft.; run csg.
Sun Oil Co. No. 2 Campbell, Chas. Breen Sur. R.U.

Cedar Point—Chambers County

Standard Oil Co. of Texas et al No. 56-94 State. R.U.

Seabreeze—Chambers County

Sun Oil Co. No. 2 Barrow, A. Ybarbo Sur. Drlg. sd.&sh. 5,136 ft.
Sun Oil Co. No. 1 Pipkin, W. M. Mays Sur. No. 104. Drlg. sh.&L. 7,267 ft.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1 Tassie Lotz, J. B. Jamison Sur. Loc.

West Columbia—Brazoria County

Frost & Dunman No. 1 E. C. Parker, G. Tennille Sur. Drlg. sh. 2,636 ft.
General Crude Oil Co. No. 1-B Campbell, S. M. Williams Sur. Drlg. sh. 936 ft.
Texas Co. No. 31 Abrams, G. Tennille Sur. Drlg. sh.&L. 3,856 ft.
Texas Co. No. 11 Phillips, G. Tennille Sur. Drlg. sh. 4,810 ft.

Green's Lake—Galveston County

Sun Oil Co. No. 3 Houston Farms Dev. Co., D. Buckley Sur. Drlg. rk. 4,236 ft.

League City—Galveston County

Geo. Echols No. 2 J. H. Ross, Perry & Austin Sur. 10¾-in. csg. 2,550 ft.; T. D. 9,285 ft.; 5½-in. csg. on bttm.; perf. csg. 9,236-60 ft.; flwd. 216 bbls. in 12 hrs.; ¼-in. ck.
Gulfboard Oil Corp. et al No. 1 Ross-Stewart, Perry & Austin Sur. 10¾-in. csg. 3,100 ft.; T.D. 10,000 ft.; 5½-in. csg. 9,050 ft.; perf. csg. 8,965-75 ft.; flwg. 4 B.F.P.H., 20% S.W.; tstg.
Midstates Oil Co. No. 2-A Maco Stewart, Perry & Austin Sur. Cg. sd. 9,247 ft.
Phillips Pet. Co. No. 1 Brittnacher, S. F. Austin Sur. Drlg. sh. 9,167 ft.
Phillips Pet Co. No. 1 J. C. Ott, S. F. Austin Sur. Cd. O.S. 7,070-9,110 ft.; T.D. 10,545 ft.; 5½-in. csg. on bttm.
Phillips Pet. Co. No. 1 Dr. Patton, S. F. Austin Sur. T.D. 10,535 ft.; 5½-in. csg. 10,412 ft.; perf. csg. 10,156-80 ft. and 10,115-27 ft.; perf. csg. 9,292-9,312 ft.; tstd. S.W.
Phillips Pet. Co. No. 1 Stewart, Title Guaranty, S. F. Austin Sur. Top sd. 9,072 ft.; T.D. 9,274 ft.; P.B.; sdtrkd.; T.D. 9,333 ft.; cd. sd. 9,256-85 ft.
West Prod. Co. No. 1 fee, Lot 2, Blk. 5, Perry & Austin Sur. Loc.

Bammel—Harris County

H. M. Harrell No. 1 Bahr, J. Schnell & H. Simmons Sur. Comp. for gas well in 6,100-ft. sd.; no ga.
H. M. Harrell et al No. 2 John Ehrhardt, Geo. DeLesdenier Sur. Spd.

Clear Lake—Harris County

Humble O. & R. Co. No. 6-C Humble-West, Geo. B. McKinstry Sur. R.U.
Humble O. & R. Co. No. 3 Hutcheson, Wm. Doble Sur. T.D. 5,843 ft.; gas sd.; W.O.C.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.

Eureka—Harris County

Jack Frazier No. 1 W. T. Helberg, H Reinerman Sur. R.U.
Jack Frazier No. 1, Shady Acres subd., Henry Reinerman Sur. Drlg. sh. 3,636 ft.
Housh & Thompson No. 1 Helberg et al, H. Reinerman Sur. Top sd. 7,687 ft.; 5½-in. csg. 7,718 ft.; perf. csg. 7,687-97 ft.; gas-oil ratio high; killed; reperf. csg. 7,691-96 ft.; tstd. oil, gas, and S.W.; killed to retest.
Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Loc.
Houston Oil Co. No. 2 D. Lackner, H. Reinerman Sur. R.U.
Tide Water Asso. Oil Co. No. 2 Roy J. Reinerman Sur. R.U.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1 Post, G. Williams Sur. T.D. 6,844 ft.; run csg.
L. Barrett No. 1 Jack Jeter, J. Bays Sur. R.U.
Kirby Pet. Co. No. 1 Daniels, S. S. Reynolds Sur. Cd. oil sd. 7,227-48½ ft.; run elec. survey.
Union Prod. Co. No. 1 Murphy, T. M. Dorsett Sur. R.U.
H. E. Williams et al No. 1 Behne, W.C. R.R. Sur. Drlg. sh. 937 ft.

Friendswood—Harris County

Humble O. & R. Co. No. 1 G. M. Anderson, T. Choate Sur. Drlg. sh. 3,730 ft.
Humble O. & R. Co. No. 10-B Godwin, W. K. Smith Sur. Drlg. sh. 3,212 ft.
Humble O. & R. Co. No. 7-B Humble-West, Luke Hemenway Sur. T.D. 6,044 ft.; W.O.C.
Humble O. & R. Co. No. 9-B Humble-West, Luke Hemenway Sur. Drlg. sh. 4,630 ft.
Humble O. & R. Co. No. 14-B Humble-West, Luke Hemenway Sur. Drlg. sh. 40,20 ft.

Cheek—Jefferson County

Geo. H. Echols No. 1 Beaumont Launch Club, C. Hildebrandt Sur. Drlg. sh. 3,125 ft.
Humble O. & R. Co. No. 1 Broussard Tr., C. Hildebrandt Sur. T.D. 7,792 ft.; abd.
Humble O. & R. Co. No. 1 E. K. Failor, C. Hildebrandt Sur. T.D. 7,740 ft.; 5½-in. csg. 7,740 ft.; perf. 7,722-27 ft.; killed to recomp.; gas-oil ratio too high; reperf. csg. 7,722-24 ft.; flwd. for 2½ hrs.; went dead; perf. csg. 7,220-25 ft.; flwg. 6 B.F.P.H., 24% S.W., bal. oil.
Humble O. & R. Co. No. 1 Pitre, C. Hillebrandt Sur. R.U.

La Belle—Jefferson County

Sun Oil Co. No. 5 Broussard-Hebert, T. &N.O. Sur. No. 207. Bldg. drk.

Cordele—Jackson County

H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Esperson—Liberty County

General Crude Oil Co. No. 1 Burgess et al, A. McNeil Sur. Drlg. sh. 3,010 ft.

Hardin—Liberty County

Atlantic Ref. Co. No. 1 Humphrey, F. Hardin Sur. W.O. rig.
Atlantic Ref. Co. No. 1 Rives, A. B. Hardin Sur. T.D. 7,649 ft.; 7-in. csg. 7,649 ft.; perf. csg. 7,564-68 ft.; tstg.
Gulf Oil Corp. No. 4 Cessna, H. B. Johnston Sur. R.U.
Gulf Oil Corp. No. 4 Tullos, H. B. Johnson Sur. Drlg. sh.&L. 6,110 ft.
Humble O. & R. Co. No. 1-B Partlow, H. B. Johnston Sur. T.D. 7,575 ft.; run electrical survey.
Texas Co. No. 2 Smith, A. A. Hardin Sur. R.U.

Orange—Orange County

Continental Oil Co. No. 18 Chesson, Wm. Dyson Sur. T.D. 5,512 ft.; fsg.
Gulf Oil Corp. No. 2 Laflour, Wm. Dyson Sur. Drlg. sh.&L. 4,569 ft.
Gulf Oil Corp. No. 10-A Winfree, Wm. Dyson Sur. Loc.
Hankamer et al No. 1 Conley, Wm. Dyson Sur. 5½-in. csg. 5,957 ft.; comp.; no ga.
John Mayo No. 1 M. J. Williams, J. Dyson Sur. Drk.
Red Bank Oil Co. et al No. 1 Allie Chesson, Wm. Dyson Sur. Drlg. sh. 1,736 ft.
Ryan et al No. 4 Chesson, Wm. Dyson Sur. Drlg. sh. 3,120 ft.

Port Neches—Orange County

Texas Co. No. 13 Kuhn, M. E. Hall Sur. Drlg. sh.&L. 4,339 ft.

Ace—Polk County

Dick Schwab No. 1-C Kirby-West Lbr. Co., G. A. Thomas Sur. Loc.
Shell Pet. Corp. No. 1 Doucett, P. A. Sublett Sur. Drlg. sh. 7,142 ft.
Shell Pet. Corp. No. 2 Doucett, P. A. Sublett Sur. Loc.

Segno—Polk County

Gulf Oil Corp. No. 4 Quinn, A. Morales Sur. R.U.
Gulf Oil Corp. No. 6-B Quinn, A. Morales Lge. Drlg. sh.&L. 3,410 ft.
Gulf Oil Corp. No. 1 Ragan, I.&G.N. Sur. No. 15. R.U.
Gulf Oil Corp. No. 5 Ragan, I.&G.N. Sur. No. 15. Loc.
Gulf Oil Corp. No. 6 Ragan, I.&G.N. Sur. No. 15. Drlg. sh. 6,830 ft.

Spurger—Tyler County

Republic Prod. Co. No. 17 fee, N. Hurd Sur. T.D. 7,745 ft.; 7-in. csg. 7,730 ft.; comp.; no ga.
Republic Prod. Co. No. 18 fee, N. Hurd Sur. R.U.

Katy—Waller County

Stanolind O. & G. Co. No. 1 McCarthy, Williamson, H.&T.C. Sur. R.U.

GULF COAST WILDCATS

Brazoria County

Crosby Drlg. Co. No. 1 Geo. S. Wilson, A. C. Reynolds Sur. R.U.
Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.
Humble O. & R. Co. No. 1 Walker, S. Marsh Sur. 13⅜-in. csg. 2,419 ft.; cg. hd. sd. 9,572 ft.
Texas Co. No. 6 Freeport Sulphur Co., C. Ariola Sur. 10¾-in. csg. 1,270 ft.; T.D. 3,503 ft.; abd.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.
L. D. Roberts No. 1 C. H. Lang, T.&N. O. Sur. No. 35. Drk.; (cor.).

Colorado County

Mills Bennett Prod. Co. No. 1 J. M. Truchard, Ed Curbit Sur. 13⅜-in. csg. 968 ft.; S.D. 7,505 ft.

Fort Bend County

Geo. Echols No. 1 Smith, Moses Shipman Sur. T.D. 6,026 ft.; abd.

Galveston County

Sun Oil Co. No. 2 Cade, A. Dickson Sur. T.D. 8,009 ft.; rmg. to set 9⅝-in. csg.

Harris County

H. C. Cockburn No. 1 Lena Griffith, Adam Sur. Loc.
Cron & Gracey No. 1 McDonald, Andrew Lawson Sur. Cg. sd. 5,519 ft.
H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.

Jefferson County

British American Oil Co. No. 3 Glady City, J. A. Veatch Sur. (SW flank Spindletop). T.D. 6,590 ft.; abd.
I. E. Harwell No. 1 State, Gulf of Mexico, T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.
Humble O. & R. Co. No. 13-B McFaddin-State, Sec. 8, 10¾-in. csg. 2,758 ft.; T.D. 5,859 ft.; D.S. stk.; backed off at 3,688 ft.; P.B. 4,220 ft.; sdtrkd.; T.D. 6,014 ft.; sdtrkd.; T.D. 6,115 ft.; P.B.; sdtrkd.; drlg. sh. 5,739 ft.
Navarro Oil Co. et al No. 1 T. F. Koch, Flutero Lopez Sur. Prep. to spud.

Matagorda County

Maja Oil Co. No. 1 Robbins, A. Sheppard Sur. R.U.
Sun Oil Co. No. 1 Cavallin, Theo. F. Koch subd., John Duncan Sur. 9⅝-in. csg. 8,502 ft.; T. gas sd. 9,313 ft.; T.D. 9,318 ft.; mixing mud.

Montgomery County

Deep South Pet. Co. No. 1-A Foster Lbr Co., Pryor Bryan Sur. Loc.
O. C. Garvey et al No. 1 Foster Lbr. Co., Neil Martin Sur. M.I.M.
H. A. Pennington et al No. 1 F. L. Banker, L. M. H. Washington Sur. S.D. 1,033 ft.
J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. S.D. 3,623 ft.

Newton County

Sun Oil Co. No. 1 Peavy-Moore Lbr. Co., T.&N.O.R.R. Sur. R.U.

Orange County

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., B. Johnson Sur. T.D. 7,867 ft.; P.B.; sdtrkd.; 7-in. csg. 9,402 ft.; T.D. 9,705 ft.; D.S. stk.; P.B. 8,384 ft.; sdtrkd.; T.D. 9,664 ft.; P.B. 8,900 ft.; drld. to 9,020 ft.; perf. csg. 8,995-9,010 ft.; tstg.; flwg. est. 100 B.F.P.D., 22 to 85% S.W. and 15 to 78% oil, varying at various times; well went dead: swbg. 98% S.W., 2% oil; P.B. 6,453 ft.; perf. csg. 6,320-30 ft.; tstd. S.W.; pulling tbg.

San Jacinto County

J. W. Frazier No. 1 Annie Smith, J. D. Martinez Sur. No. 10. M.I.M.

Washington County

Mount Selman Oil Co. No. 1 Fritz Fuelberg, John Lightfoot Sur. R.U.

Wharton County

Helmerich & Payne No. 1 J. L. Myatt, E.T.R.R. Sur. Drlg. sh. 2,786 ft.

S. W. TEXAS WILDCATS

Bastrop County

H. H. Coffield and H. R. Edwards No. 1 McAden, Jose Antonio Navarro Sur. Drlg. sh. 1,250 ft.

Bee County

Rodney DeLange et al No. 1 B. F. Boss, Sam May Sur. R.U.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,201 ft.
G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,208 ft.

Bexar County

Fred Beatty No. 1 Joppich, Iginio Tejado Sur. No. 186. 6⅝-in. csg. 575 ft.
H. G. Krumm No. 1 Kempf, Samuel McCollough, Jr., Sur. 54. T.D. 770 ft.; tstd. small amt. of oil; reworking well. tstg. on pmp.
L. L. Skaggs No. 1 Braubach, Fernando Rodriquez Sur. Drlg. sh. 317 ft.
Joe Wagner et al No. 1 Florence Lamm, Manuel De Luna Sur. Cg. 973 ft.

Blanco County

E. L. Nixon No. 2 Crist, John McClenechen Sur. No. 94. Drlg. sh. 284 ft.

Brooks County

Humble O. & R. Co. No. 4 McGill Bros., LaBlanca gr., 1,866 ft. N. of No. 1. T.D. 4,725 ft.; flwd. 97 bbls. in 12 hrs.; ⅞-in. ck.
Humble O. & R. Co. No. 5 McGill Bros., La Blanca gr. Drlg. sh. 4,730 ft.

Comal County

O. W. Killam No. 1 Gruene, Henry Foster Sur. T.D. 1,700 ft.; L.

De Witt County

Richardson et al No. 1 W. D. McCurdy, John Hunt Sur. T.D. 150 ft.

Duval County

Dan Auld et al No. 1 Pope Dimitt, Jose Marcelo Ynojosa gr. Snd.
C. G. Glasscock No. 1 Nicholas Garcia, Santa Cruz De Concepcion gr. S.D. 4,039 ft.
Gravis and Doran No. 1 Parr, San Andres gr., 1 mi. N of Sweden field Cg. sh. 6,026 ft.
Frank Gravis No. 3 Schallert, Seale, Morris & Seale Sur. No. 2550. T.D. 3,168 ft.; P.B. 1,800 ft.; prep. to sdtrk.
Hamill & Smith No. 1 Perez, Cordente Hrs. T.D. 3,114 ft.; S.D.
Hamill & Smith No. 1 A. Well, B.S.&F. Sur., Sec. 567. Cg. sd. 1,818 ft.
Lanning & Coffield et al No. 1 W. T. Peters, C.C.S.D. Co. Sur. No. 66. Drlg. sh. 1,267 ft.
Magnolia Pet. Co. No. 1 Denman, Santos Garcia gr. R.U.
H. J. Porter et al No. 1-B Clara Driscoll, Rosa G. Gray Sur. T.D. 4,195 ft.; abd.
W. A. Wagner No. 1 D. J. Weikel, John H. Gibson Sur. No. 497. R.U. and S.D.

Goliad County

Martex Oil Co. No. 1 Wm. F. Albrecht, Thos. Hancock Sur. Drlg. sh. 3,310 ft.

Gonzales County

Otton Elder No. 1 Wilkinson, Russell Ward Sur. S.D. 425 ft.
Hochheim Dev. Trust No. 1 Dubose, E. G. Coffman Sur. 10-in. csg. 37 ft.; S.D. 2,509 ft.

Guadalupe County

Frank Glenn No. 1 Appling, Harriet Cottle Sur. No. 14. T.D. 2,218 ft.; tstg. 2-130-37 ft.; 7-in. csg. 1,960 ft.; R.U. to pmp.; perf. open form. 1,960-2,182 ft.; I.P. 18 B.O., small amt. wtr.; pmpg.
John Hueners No. 1 Boecker, John Baker Sur. No. 26. Drlg. 836 ft.
White & Landrum No. 1 Walker Est., B. White Sur. Drlg. sh. 300 ft.
R. A. Williams No. 1 Weber, Guadalupe Torres Sur. T.D. 1,483 ft. (cor.); 4½-in. csg. 1,468 ft.; abd.

Hidalgo County

Pan American Prod. Co. No. 1 J. De la Vina Vicente Hinojosa gr. T.D. 8,125 ft.; P.B. 6,391 ft.; D.S.T. 7,985-8,023 ft.; tstd. S.W.; drld. plug; found cmt. soft; P.B. 6,215 ft.

Jim Hogg County

A. W. Dillard No. 1 Julian Ramirez, John S. Williams Sur. R.U.
Humble O. & R. Co. No. 8 Bass, San Raphel gr. Drlg. sh. 4,312 ft.
Humble O. & R. Co. No. 1 Mestena O. & G. Co., Fowler & Rankin subd., Pallitos Blanco gr., R. G. Sars Sur. 16-in. csg. 70 ft.; T.D. 2,007 ft.; 10¾-in. csg. 1,563 ft.; T.D. 4,121 ft.; S.D.
Johnson & Robinson No. 1 Palacios, Mary Montgomery Sur. S.D. 2,465 ft.
Johnson & Robinson No. 2 Palacios Est., Mary Montgomery Sur. No. 230. T.D. 434 ft.; abd.

Jim Wells County

F. A. Gillespie & Sons No. 1 Shear, Blk. 24, Adam Beatty & Moulton Sur. R.U.
H. H. Howell et al No. 1 W. T. Wright, Ross M. Bridges Sur. T.D. 6,800 ft.; well tried to blowout at 6,500 ft.; 5½-in. csg. 6,790 ft.; perf. csg. 6,644-48 ft.; tstd. S.W.; S.S.O.; T.P. 600 lbs.; C.P. 900 lbs.; killed well; reperf. csg. 6,644-48 ft.; no results; prep. to reperf. csg.
Tom Graham No. 1 N. O. Adams, Marcellino Lopez gr. Drlg. sh. 4,539 ft.
Magnolia Pet. Co. No. 1 Samuel Maun, Los Olmos y Loma Blanca gr. 7-in. csg. 6,314 ft.; T.D. 7,560 ft.; run elec. survey.
W. H. Mathews No. 1 Frances Clark, Los Precenos gr. 10¾-in. csg. 617 ft.; tstd. 450 lbs. press.; 1 qt. oil on D.S. T. 5,141-58 ft.; 5½-in. csg. 5,309 ft.; T.D. 5,319 ft. (cor.); perf. csg. 5,202-12 ft.; tstd. S.W.; perf. csg. 5,138-42 ft.; flwd. 5 bbls. dist. per day; 9/64-in. ck.; killed well; reperf. csg. 4,825-35 ft.; tstg.

Kenedy County

Humble O. & R. Co. No. 1 Kenedy rnh., Penaseal gr. R.U.

Kleberg County

Pure Oil Co. No. 1 State, Tr. No. 155, Drlg. sh. 6,112 ft.

Lavaca County

H. L. Edwards et al No. 1 Frank Rather, M. Wooten Sur. R.U.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. T.D. 6,404 ft.; acd.; R.U. pmpd. 100 bbls. fluid; 36 hrs.; 3 bbls. oily emulsion, bal. S.W.; dpnd. to T.D. 6,424 ft. fluid standing; 5,000 ft. S.W. and oil.

Live Oak County

Bruce Albright No. 1 Texas Joint Stock Ld. Bnk., J. Poitevent Sur. No. 197. Drlg. sh. 465 ft.
Harry Hotchkin No. 1 Wade, J. Sommers Sur. No. 147. Cg. sh. 1,556 ft.
L. W. Stieren No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

Boysen & Jones No. 1 Hagist, B.S.&F. Sur. No. 127. T.D. 2,054 ft.; abd.
Holbrook and O'Farrell No. 1 Miles, J. Poitevent Sur. S.D. 1,003 ft.
Merle Morton No. 1 Valadez, Antonio De La Rosa, Porc 85. Loc.
Mid-Western Pet. Corp. No. 1 C. E. Byrne, Geo. Pittuck Sur. R.U.
C. D. Scarborough and Bigiane No. 1 Paul Foyt, James Garner Sur. No. 6. Drlg. 336 ft.
Shumway & Burns No. 3 Shiner, Sec. 21 of Shiner rnh. Drlg. sh. 250 ft.
R. M. Strum and Womack No. 1 Smith and Leischner, A. Zumwalt Sur. S.D. 949 ft.

Medina County

John Clopton et al No. 1 T. A. Wilson, Wm. P. Scott Sur. S.D. 2,005 ft.
J. I. and J. W. Cromwell No. 1 Tschirhart, I. J. Rogers Sur. No. 18. Drlg. 218 ft.
Gilcrease Oil Co. No. 1 W. S. Lilley, Abi Clark Sur. Drlg. sh. 324 ft.
Victor Ziegler No. 1 Paul Haby, Wm. G. Still Sur. No. 1. S.D. 875 ft.

Milam County

Alex Krause No. 1 Graves, Jackson Hall Sur. S.D. 900 ft.

Nueces County

H. D. & H. Oil Co. No. 1 Wright, V. L. De Herrera gr. Cg. 5,136 ft.

Heep Oil Corp. et al No. 1 G. W. Smith, Jose Vicente Lopez de Herrera gr. 10¾-in. csg. 1,090 ft.; T.D. 5,050 ft.; 7-in. csg. 5,049 ft.; perf. csg. 5,043-47 ft.; swbd.; no show; drlg. sh. 5,276 ft.
Henshaw Bros. No. 1 Countiss, V. L. De Herrera gr. Cg. 5,076 ft.
O. W. Killam No. 1 J. O. Chapman, E. L. Rincon de Corpus Christi gr. Drlg. sh. 6,239 ft.
Republic Nat. Gas Co. No. 1 Robertson, Vincent Lopez de Herrera gr. 10-in. csg. 1,888 ft.; T.D. 5,525 ft.; 7-in. csg. 5,502 ft.; perf. csg. 5,298-5,308 ft.; tstd. mud; no show; abd.
Seaboard Oil Co. No. 8 Chapman, Laureles Farm Trs. (1 mi. S of Chapman field). Drlg. sh. 3,630 ft.
Seaboard Oil Co. No. 2 Wilson, Jose Vincente Lopez de Herrera Sur., Blk. 9, 13⅜-in. csg. 1,551 ft.; T.D. 5,037 ft.; 9⅝-in. csg. on bttm.; perf. csg. 4,994-97½ ft.; flwg. gas and wash wtr.; kld.; reperf. csg. 4,995-98 ft.; flwd. 50 bbls. P.L.O., 4 hrs.; ⅛-in. ck.; killed; reperf. csg. 4,996-99½ ft.; flwd. 81 B.P.D.; 7/64-in. ck.; T.P. 1,275 lbs.; C.P. 1,650 lbs.; tstg.
Shell Pet. Corp. No. 1 Griffith, Vicente Lopez de Herrera gr. Drlg. sh. 1,863 ft.

Real County

Blakely Smith et al No. 1 Love Ranch, H.E.&W.T.R.R. Co. Sur. S.D. 310 ft.

Refugio County

Coronado Corp. No. 9 Rooke, Aldrete 6¼ Lge. 5½-in. csg. 6,352 ft.; W.O.C.
Coronado Corp. No. 12 Rooke, Aldrete 6¼ Lge. T.D. 5,916 ft.; W.O.C.
Hewitt & Dougherty No. 1-B Rooke, Aldrete 6½ Lge. Cg. 5,339 ft.

San Patricio County

Copano Oil Co. No. 2-C O'Connor, Timothy Hoyt Sur. (Mellon Creek field). Drlg. 4,598 ft.
Copano Oil Co. No. 3-C O'Connor, Timothy Hoyt Sur. (Mellon Creek field). Drlg. 4,039 ft.
Coronado Corp. No. 5 Michna, Aldrete 6¼ Lge. (La Rosa field). Cg. 5,936 ft.
Culton et al No. 1 McCampbell, Peter Mahoney Sur. Drlg. sh.&L. 5,750 ft.
Morgan, Gulf Oil Corp. No. 1 B. D. Rooke, Aldrete 6¼ Lge. (La Rosa field). Drlg. 1,536 ft.
Plymouth Oil Co. No. 1 Wilson, John Brown Sur. Drlg. sh. 3,695 ft.

Starr County

Banks Miller Oil Co. No. 2 Garcia, Juan Salinas Porc. No. 71. Drlg. sh. 596 ft.
Magnolia Pet. Co. No. 1 M. M. Garcia, S. Vela Porc. No. 90. R.U.
Rhinehart and Bowman No. 1 Bowman, J. C. McCarty Sur. M.I.M.
Rowan-Hope and Transwestern Oil Co. No. 1 W. I. Cameron, Geo. W. Smith Sur. R.U.
Sun Oil Co. No. 4 McKinney, A. J. Smith Sur. No. 240. T.D. 5,382 ft.; perf. csg. 4,610-23 ft.; tstd. dist.
Sun Oil Co. No. 1 Olivarez, C.C.S.D.&R. G.N.G. Sur. T.D. 5,179 ft.; D.S.T. 5,075-92 ft.; rec. S.W.
W. W. Zimmerman No. 1 M. S. Tijerina, H.E.&W.T.R.R. Sur. No. 299. Cg. sh. 842 ft.

Travis County

Oscar Raesz et al No. 1 J. W. Swahn, Phillips McElroy Sur. No. 16. Drlg. sh. 265 ft.; no report.

Webb County

Gilcrease Oil Co. No. 1 W. E. Trafton, J. Poitevent Sur. No. 281. Drk.
Smith & Storey No. 1 Houston Oil Co., R. O. Barnsley Sur. No. 24. R.U.

Willacy County

Cockburn et al No. 1 Yturria Ld. Livestock Co. M.I.M.

Williams County

Fritz Fuchs No. 1 Schmidt, J. West Sur. T.A. 1,400 ft.; chk. top A.C. 1,350 ft.

EAST TEXAS

(Border Counties)

Harrison County

F. H. Barnwell No. 1 Smith, A. P. Hope Sur. P.B. 2,425 ft.; tstd. dry; S.D.; W.O.

Marion County—Rodessa

Ark.-La. Gas Co. No. 2 Belcher, A. D. S. Coy Sur. Drlg. L.&anhy. 5,821 ft.
Gulf Oil Corp. No. 1 C. Ray, John Hanks Sur., NW cor. lse. 9⅝-in. csg. 1,910 ft.; drlg. 2,426 ft.
Harry Hanbury et al No. 2 Davis, Wm. R. Meyers Sur. Drlg. sd. 4,787 ft.

Marion County—Other

Tom Bell No. 1 Moseley, D. Lane Sur. Swbd. some oil; washing; S.O.
S. L. Fulton et al No. 1 Burks, G. Coor Sur. Spdg.
Van Horn & Clements No. 1 Berk, G. Coore Sur. R.U.

Sabine County

Hugo Allen No. 1 Brooks, Isaac Low Sur. S.D. 5,885 ft.; flows ½ to 3 bbls. 41-grav. oil and goes dead; C.P. 500 lbs.; will attempt to comp. as gas well.

WEST TEXAS WILDCATS

Andrews County

Atlantic and Standard No. 1-B Cowden, Sec. 1, Blk. 14, T.&P. Sur. P.B. 4,280 ft.; W.O.C.
J. W. Tripplehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A. Pmpg. 8 B.O. P.D., 4,480 ft.

Borden County

Continental Oil No. 1 L. S. Monger, Sec. 38, Blk. 31, T.&P. Sur.; 4,000-ft. test. Drlg. 710 ft.

Brewster County

H. D. Wilcox No. 2 Kokernot, Sec. 23, Blk. C, J. V. Massey Sur. S.D.R. 60 ft.

Cochran County

T. G. Shaw, Tr., No. 1 Carrie S. Dean, Lge. 94. Swbg. 12 B.F.P.H., 4,981 ft.

Concho County

Clymore Co., Inc., No. 1 Hill, J. Frederick Sur. No. 1694. Fsg. 1,044 ft.

Crane County

Great Western Prod. No. 1-B Univ., Sec 5, Blk. 30, Univ. Sur. W.O.C. 3,219 ft.
Gulf Oil Corp. No. 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. W.O.C. 680 ft.
Magnolia Pet. Co. No. 12 W. P. Edwards, Sec. 12, Blk. 23-B, P.S.L. Sur. Drlg. 3,279 ft.
Magnolia Pet. Co. No. 1-18 University, Sec. 18, Blk. 30, Univ. Sur. W.O.C. 3,047 ft.

Crockett County

Hanson & Anderson No. 1 W. T. Knoelke, Sec. 30, Blk. GG, H.E.&W.T. Sur. Spd. and S.D.
Humble No. 1 Ozona-Barnhart, Sec. 4, Blk. M-N, G.S.&F. Sur. Drlg. 3,850 ft.

Culberson County

Harry Niehaus No. 1 Caldwell, Blk. 109, Sec. 13, P.S.L. Sur. Drlg. 3,485 ft.
Quito Oil Co. No. 1 Cameron Lbr. Co., Sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dawson County

Daw-Tex Oil No. 1 J. E. Neely, Sec. 28, Blk. 35, T.&P. Sur. Prep. cmt. 7-in. 4,369 ft.; pulling collapsed 7-in. at 4,450 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. W.O. csg. 3,508 ft.
Humble O. & R. Co. No. 1 Matador Ld. & Cattle Co., Sec. 26, Blk. 1, Shock & Arnold Sur.; 6,000-ft. test. Drlg. 6,009 ft.

Ector County

M. B. K. Drlg. Co. No. 2 Gist, Sec. 9, Blk. 42, T.&P. Sur. C.&P.
R. R. Rhodes No. 1 J. L. Johnson, Sec. 43, Blk. 42, T.&P. Sur. Rng. 10-in. 225 ft.; no report.
Sinclair Prairie No. 1 Fay Holt, Sec. 1, Blk. A, P.S.L. Sur. Tstg. for split 7-in. at 4,100 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel, S.D. 3,571 ft.

Gaines County

Osage Drlg. Co. No. 1 E. H. Jones, Sec. 20, Blk. 7-A, P.S.L. Sur. M.I.M.

Garza County

Gulf Oil Corp. No. 1 Swanson, Sec. 25, Blk. 2, H.&G.N. Sur. Flwd. 148 B.O. in 9 hrs.; P.B. depth of 7,400 ft.; P.B. 6,821 ft.; tstd. S.W.; P.B. 6,134 ft.; tstg.; drld. out to 6,857 ft.; P.B. 6,296 ft.; swbg and tstg.

Glasscock County

B. A. Duffy No. 1 Carter-Shell, Sec. 8, Blk. 33, T.&P. Sur. Drlg. 751 ft.
J. R. Petty No. 1 Joe Blake, Sec. 163, Blk. 29, W.&N.W. Sur. Drlg. 320 ft.

Hockley County

S. W. Richardson No. 1 A. E. Coe, Lbr 53, Lge. 40, Maverick C.S.L. Sur. Cd. several zones of sat.; P.B. 5,143 ft.; tstg. wtr. shutoff; flwd. 12 B.P.H.

Howard County

Dick Graham No. 1 P. Johnson, Sec. 34, Blk. 32, T.&P. Sur. Loc.
T. G. Shaw, Tr., No. 1-B Wilkerson, Sec. 19, Blk. 34, T.&P. Sur. Rng. 7-in. 2,963 ft.

Hudspeth County

Haymon Kroupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6. Drlg. 5,810 ft.; S.G. at 5,779-5,810 ft.
Haymon Krupp No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur. W.O.C. 5,365 ft.

Irion County

Clyde Crabb No. 1 W. M. Boelke, Tom Green C.S.L. Sur. Drlg. 1,340 ft.
J. W. Ellis No. 1 Sol Mayer, Sec. 240; Blk. 1, T.&P. Sur.; 2,100-ft. test. Lost hole, skidded 10 ft. east; S.D. 290 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. W.O.C. 4,450 ft.

Martin County

T. G. Shaw, Tr., No. 1 Wilkerson, Sec. 35-A, B.&C. Sur. S.D. 3,785 ft.

Pecos County

Geo. T. Abell No. 1 W. Williams, Sec. 11, Blk. 3, H.&T.C. Sur. Drlg. 508 ft.
Ben Dansby No. 1 L. C. Lessenich, Sec. 45, Blk. 9, H.&G.N. Sur. Drlg. 305 ft.
J. L. Green No. 1 Iowa Realty Tr., Sec. 139, Blk. 10, H.&G.N. Sur. Drlg. 1,220 ft.
O. E. Schade No. 1 Neville, Sec. 72, Blk. 194, G.C.&S.F. Sur.; 2,500-ft. test. Drlg. 2,513 ft.
O. E. Schade No. 1 Otis Garrett, Sec. 59½, Blk. 8, H.&G.N. Sur. Drlg. 1,594 ft.
Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. S.D. csg. 1,735 ft.
S. Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Rig burned; dropped baller in hole; S.D. 7,000 ft.
J. C. Trees No. 1 fee, Sec. 63, Blk. 8 H.&G.N. Sur. W.O.C. 2,047 ft.

Reeves County

Artie Baker No. 1 J. W. Grider, Sec. 31 Blk. 58, P.S.L. Sur. S.D.R. 450 ft.

Schleicher County

Lone Star Gas Co. No. 1 Bert Page, Sec. 30, Blk. L, G.H.&S.A. Sur. Drlg. 3,345 ft.
Lone Star Gasoline Co. No. 2 Bert Page, Sec. 46, Blk. L, G.H.&S.A. Sur. Drlg. 2,015 ft.

Scurry County

Coffield & Guthrie No. 1 First Natl. Bk., Snyder, Sec. 29, Blk. 97, H.&T.C. Sur. Drlg. 2,077 ft.

Tom Green County

Dan Short et al No. 1 J. G. Davidson, NW part of Lovie P. Moore Sur. Loc.
Southern Cross No. 1 Upton & Upton Sec. 20, Blk. A, A.B.&M. Sur. Drlg. 556 ft.
Spinner No. 1 Reed, Mason Ferry Ranch Sur. W.O.C.; cave 4,948 ft.
Tom Green Oil Co. No. 1 Schreiber, A. Krending Sur. No. 1663. S.D. 1,000 ft.

Upton County

White & Wilson No. 1 Webb, Sec. 176, Blk. 1, C.C.S.D.&R.G.N.G. Sur. S.D.R 715 ft.

Ward County

Robt. E. Mitchell No. 1 Allen, Sec. 7, Blk. 32, H.&T.C. Sur. P.B. 2,145 ft.; tstg.

Winkler County

Standard Oil, Texas, No. 2 Baird, Sec. 13, Blk. 3-B, P.S.L. Sur. W.O.C. 1,042 ft.

Yoakum County

Honolulu Oil No. 10-695 R. Bennett, Sec. 695. Tstg. 5,250 ft.
Osage Drlg. Co. No. 1 Miller, Sec. 898, Gibson Sur. Drlg. 4,283 ft.
Shell Pet. Corp. No. 1 J. M. Rutts, Sec. 743, P.B. 5,229 ft.; S.D.
Shell Pet. No. 1 Waples-Platter, Sec. 616 Drlg. 4,140 ft.
T. & P. Oil Co. No. 1 A. M. Brownfield, Sec. 802. Drlg. 4,600 ft.

TEXAS PANHANDLE

Collingsworth County

C. H. Mee and C. F. Anderson No. 1 V K. McCaskill, Sec. 18, Blk. 16, H.&G N. Sur. Drlg. 1,735 ft.
Johnson No. 1 Taylor. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell. S.D. 5,650 ft.

Donley County

Robinson No. 1 Kuteman, Sec. 88, Blk 20, H.&G.N. Sur. S.D. 4,406 ft.

Gray County

Products O. & G. Co. No. 1 Mason Davis, Sec. 23, Blk. 23-M, H.&G.N. Sur Loc.
Tripplehorn No. 2 Webb, Sec. 12, Blk A-9, H.&G.N. Sur. Cl. out 2,665 ft.

Lipscomb County

Darrouzett Oil Co. No. 1 Pugh, 1½ mi. S and 1 mi. W of Darrouzette. S.D.; wtr. 3,401 ft.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush, Sec 23, Blk. 6, B.S.&F. Sur., about 3 mi N of Amarillo; 8,500-ft. test. P.B. 3,590 ft.; will comp. as a helium well.

Roberts County

Whitlock No. 1 Cunningham. Drlg. 4,096 ft.

E. C. TEXAS WILDCATS

Cherokee County

C. C. Lanier No. 1 A. T. O'Neal, J. M Procella Sur., 3 mi. E of Troup. Drlg 1,840 ft.

Falls County

Marshall Hayes No. 1 M. Murphy, J. M Sanches Sur., 2 mi. NE of Lott. W.O. S.R. 1,221 ft.

Freestone County

A. J. Willis No. 1 W. W. Craig, C. Teas Sur., 8 mi. N of Fairfield. Drlg. 1,000 ft.

Grayson County

F. H. E. Oil No. 1 Graham, Chas. Quillen Sur., 1 mi. S of Collinsville. Prep. abd. 3,905 ft.
John Grey No. 1 Freedman, W. S Reeves Sur., 8 mi. NW Denison. R.U.
Jim McMurrey No. 1 Dr. T. J. Long, J Garland Sur., 2 mi. S of Collinsville. 4,000-ft. test. S.D.O. 3,929 ft.
Ross & Marshall No. 1 J. N. Taylor, W Moore Sur., 8½ mi. NW of Denison S.D. 775 ft.

Houston County

Cook & Mayo No. 1 C. A. Walling, B Parker Sur., 4 mi. N of Grapeland T.D. 6,077 ft.; prep. to test.
Leggett & Gossett No. 1 B. F. Gardner, J. Thorn Sur., just N of Weldon. R.U. and S.D.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. S.D. 40 ft.
W. G. McGee No. 1 General American Life Ins. Co., John Baker Sur., 6 mi. w of Mabank. Drk.

Leon County

Humble O. & R. Co. No. 1 Ed F. Swift, H. W. Subblett Sur., 4 mi. NW of Navarro Crossing field. Loc.

Limestone County

H. Gant No. 1 Vol De Long, P. Varela Sur., 1½ mi. NW of Thelma. S.D. 2,924 ft.

McLennan County

C. E. Porter No. 1 B. D. Burchett, De la Vega Sur., just SE Waco. S.D. 695 ft.

Navarro County

Guy Sitton No. 1 J. P. Fortson, T. J. Chambers Sur., 4 mi. E of Alma. S.D. 628 ft.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. S.D. 30 ft.

Red River County

Bentley-Sheppard & Stevens No. 1 So. Pine Lbr. Co., G. S. Parks Sur., 17 mi. N of Clarksville. S.D. 71 ft.

Smith County

R. W. Rair No. 1 Clark, J. Lewis Sur., 2 mi. W Mt. Sylvan. S.D. 190 ft.
J. H. Thomason No. 1 J. W. Bartlett, R. H. Stewart Sur., ½ mi. SE of Jamestown. Rmg. 1,958 ft.

Trinity County

C. D. Davis No. 1 J. D. Gibson, A. Donavan Sur., 4 mi. NE of Trinity. Gas blowout 148 ft.; S.D. 2,627 ft.

Upshur County

R. E. L. Johnson No. 1 Lizzie Parker, John B. Gay Sur. Drlg. 3,764 ft.

Van Zandt County

F. A. Richardson No. 1-A B. C. Dodd, T. W. Hutchinson Sur., 2 mi. S of Grand Saline. S.D. 1,925 ft.

Wood County

Geo. Strake No. 1 Farrier, J. Walker Sur., 4 mi. E of Yantis. S.D. 300 ft.; high wtr.

WEST CENTRAL TEXAS DISTRICT

Brown County

A. D. Bruce No. 1 L. J. Mauldin, Sec. 15, H.&T.C. Sur. Spd. and S.D.
E. C. Norman No. 1 Stella Rice, Chas. Messenger Sur. No. 127. S.D.R. 981 ft.

Callahan County

Dobbs Oil Co. No. 1 Finley, Sec. 75, Bayland Orphans Home Ld. Fsg. 1,785 ft.
J. C. Jackson and Doug. Tomlingson, Jr., No. 1 T. J. Thompson, Sec. 30, B.B.B. &C. Sur. Drlg. 1,882 ft.

Coleman County

Arcadia Ref. Co. No. 1 W. R. Roberts, D. J. Holt Sur. S.D.O. 3,342 ft.
Oscar Howe No. 1 De Busk, Isaac Harris Sur. No. 164. S.D. 195 ft.
E. E. Kirkpatrick No. 1 F. Nixon, Burnett, C.S.L. Sur. Drlg. 2,870 ft.

Comanche County

Comanche O. & G. Co. No. 1 J. E. McGuire, C. Rockefeller Sur. No. 3. Tstg. 2,910 ft.
E. T. DeArman No. 1 Moorman, Sec. 37, D.&D.A. Sur. Tstg. 2,560 ft.
O. L. Johnson No. 1 Mrs. W. Jones, Sec. 34, H.&T.C. Sur., Abst. 1610. S.D.O. 2,835 ft.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. Drlg. 2,200 ft.

Erath County

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. S.D. 3,985 ft.
Collard No. 1 W. L. Payton, H. Pierson Sur. No. 1, Abst. 1105. S.D. 185 ft.

Fisher County

J. D. Baker No. 1 O. R. Burnham, Sec. 4, Blk. R, W. D. Richardson Sur. S.D. O. 3,214 ft.
Joe DeGrazier No. 1 Harbough, E cen. part of county, Sec. 1563, T.E.&L. Sur. 4,500-ft. test. S.D. 3,894 ft.
W. Waddington No. 1 Cottle, Sec. 42, Univ. Sur. Sp. and S.D.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. 51. Drlg. 2,416 ft.

Haskell County

Sawyer Drlg. Co. No. 1 A. J. Rowland Est., Sec. 5, Blk. 3, H.&T.C. Sur., 15 mi. E of Stamford. S.D.O. 5,120 ft.

Hood County

Prince & Miller No. 1 J. H. Andrews, NW cor. of Geo. Sutherland Sur. S.D. 615 ft.

Jones County

Brown Eagle No. 1 Waterson, Andrews Sur. No. 191. T.D. 2,283 ft.; S.D.

R. B. Carrol No. 1 G. Herndon, Goliad C.S.L. Sur. Cmt. csg. 2,639 ft.; prep. tst.
Ed. L. Evans No. 1 B. J. Crier, Sec. 8, B.A.L. Sur. U.R. 1,469 ft.
G. M. Gillispie No. 1, Sec. 54, O.A.L. Sur. Drlg. 1,234 ft.
J. H. Sproules No. 1 James Nichols, Sec. 47, Blk. 16, T.&P. Sur. Tstg. 1,796 ft.; est. 15 B.O.P.D.

Nolan County

Chas. E. Peddicord No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. S.D. 2,927 ft.
Union Oil Co. No. 1 J. D. Pepper, Sec. 51, Blk. 21, T.&P. Sur.; 5,000-ft. test. 6 mi. SW Sweetwater. D.&A. 6,011 ft.

Palo Pinto County

W. K. Gordon No. 1 J. W. Conway, Ruidosa I.R.R. Sur. Drlg. 125 ft.

Parker County

Brown-Gardner Bros. No. 1 Gilbert, T.& P. Sur., Abst. 1958. S.D. 2,200 ft.

Shackelford County

W. J. Dettenhaim No. 1 Mrs. F. J. Lynch, Sec. 24, B.A.L. Sur. Drlg. 428 ft.
Fox & Rudd No. 1 Shotwell, Sec. 59, B.A.L. Sur. Fsg. 1,632 ft.
R. H. Gordon and Frank Pethybridge No. 1 C. B. Synder, 330 ft. fr. N and E lines, Sec. 38, L.A.L. Sur.; 4,500-ft. test. Est. 20 to 50 B.O.P.D.; T.D. 3,660 ft.; S.D. 4,293 ft.

Taylor County

Forest Dev. Co. No. 1 Anderson, Sec. 8, L.A.L. Sur. D.&A. 3,546 ft.

NORTH TEXAS WILDCATS

Archer County

Birdwell Oil Co. No. 31-B Oil Inv. Co., Lot 2, John Richards Sur., 5 mi. NW of Archer City; 4,200-ft. test. Drlg. 4,258 ft.
Phillips Pet Co. No. 1 J. B. Miller, Sec. 20, A.T.N.C.L. Sur. T.D. 4,006 ft.; O. W.D.D.; S.O. to D.D. to 4,500 ft.; C.O. 3,800 ft.
L. Sikes No. 1 Miller, Wm. Shaw Sur. A-378. Drlg. 5,235 ft.

Baylor County

British Am. O. P. Co. No. 1 J. E. Cope, Sec. 220, T.&N.O. Sur. Drlg. 2,755 ft.

Clay County

L. T. Burns No. 1 Browning, Sec. 94, Belcher subd.; 5,000-ft. test. 6⅝-in. 4,437 ft.; S.S.O. 4,435-45 ft.; W.O.C.

Foard County

Fleetwood & Kaufman No. 1 Prowers, H.&T.C. Sur., Blk. A. S.D.O. 5,005 ft.

Jack County

Pitzer & West No. 1 F. Warren, Sec. 2784, T.E.&L. Sur. Drlg. 4,411 ft.

Montague County

Benton & Holmes No. 1 J. Bowers, Sec. 55, M.E.P.&P. Sur. S.S.O. 2,887-95 ft.; 6⅝-in. 2,883 ft.; tstg. est. 500 to 600 B.P.D.

Wichita County

F. S. Freeland No. 1 J. D. Cooper, H. Hastie A-92; 4,000-ft. test. Spd. and S.D.

Wise County

H. Jackson No. 1 F. Neeley, Blk. 29, Matagorda Co. Sch. Ld. Spd. and S.D.
H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Lds. Pits.

Wilbarger County

Lawson & Leavell No. 16 W. T. Waggoner A, Sec. 109, H.&T.C. Sur., Blk. 14. Matl. 3,500-ft. test. Spd. and S.D.

Young County

Brader & Groves No. 1 J. L. Clark, Sec. 2, E.L.&R.R. Sur. 6⅝-in. 3,850 ft.; O.S. 3,850-60 ft.; est. 200 bbls.; tstg.
H. M. Leidecker No. 1 J. M. Nail, Sec. 1997, T.E.&L. Sur. S.D. 1,515 ft.
Long & Lupton No. 1 A. Crouch, I.&G. N. Sur. A-1460. 6⅝-in. 3,865 ft.; sat. L. 3,940-44 ft.; treating with acid; test wtr.; S.D.O.
Magnus & McLester No. 1 B. B. Teague, E. S. Colthrop Sur. A-1390. 6⅝-in. 3,786 ft.; G.L. 3,780-3,825 ft.; treating with 6,000 gal. acd.; est. 200 bbls.; S. D.O.; est 10 B.P.D.; may D.D.

Canadian Fields

(Continued from Page 92)

Anglo-Canadian Oil Co. No. 1, Section 20-14-4w5, is deepening below 95 feet, after entering the Banff shale, indicating the Devonian limestone, in which production is expected, may be reached around 800 feet.

In the Pincher Creek area, Anglo-Canadian No. 1 Castle River, LSD 4, Section 11-6-1w5, is below 6,377 feet.

Cooperative Test Planned

A test financed on a cooperative basis is being started by Sinclair Valley Syndicate No. 1 location is in SW quarter Section 22-16-3w5, 3½ miles northwest of the Alberta Associated Oils "Christie" well in which oil approximating commercial production was encountered above the limestone in 1922. The test is sponsored by a Chinese group headed by Wong Pond of Olds, Alberta. Derrick and camp material have been moved to location and cellar is being dug. A group of 10 men has undertaken to make nominal per day payments to eight drillers in return for production units; while the drillers will take the balance of their pay on the same basis, the units being a first charge on oil and gas production.

Border Fields

In the Taber field, southern Alberta, Noble Drilling Co. No. 1, LSD 14, Section 33-8-17w4, is rigging. North Taber Royalties No. 1, LSD 7, Section 10-11-15w4, is below 3,000 feet after cementing and sidetracking lost tools.

Border Petroleums No. 1, LSD 5, Section 32-19-17w4, is below 2,632 feet after encountering some small shows of crude.

On the Bridge Dome structure, Anglo-Canadian Oil Co. No. 1 Milk River, LSD 10, Section 4-2-13w4, is acidizing and testing after cementing production casing in the top of the lime at 2,452 feet.

On the Del Bonita structure, Terminal Oil Co. No. 1, NE quarter Section 18-1-21w4, is reported flowing around 65 bbls. a day after gun perforating and acidizing, production being 36.4-gravity crude. Terminal No. 2, NW quarter Section 7-1-21w4, has been standing at 175 feet pending completion of production operations at No. 1. Production comes from the top of the Madison limestone.

Southern Alberta Survey

M. S. Blackburn of San Antonio, Tex., arrived recently in Lethbridge, Alberta, to make preliminary arrangements for an extensive geophysical survey of oil structures in southern Alberta. The survey will be conducted for Calgary interests headed by O. S. Chapin.

Steveville Operations

In the Steveville area, east of Calgary, Anaconda Oil Co. No. 1, LSD 15, Section 9-22-12w4, bottoming at 2,505 feet, is underreaming and lowering 10-inch casing below 2,300 feet.

Anglo-Canadian Oil Co. No. 1, LSD 2, Section 13-21-12w4, is standing with 7-inch casing cemented in the top of the Madison limestone at 3,178 feet. Anglo-Canadian No. 2, LSD 4, Section 14-20-11w4, is waiting for Diesel outfit.

Saskatchewan Tests

In western Saskatchewan, Western Royalties No. 1 Twin Provinces, LSD 6, Section 21-11-29w3, on the Box Elder structure, is cleaning out caving close to old bottom at 2,150 feet, preparatory to deepening.

Ontario Drilling

In the Dover field, Kent County, Ontario, Prairie Oil & Gas Co. No. 7, Earl Thomas farm, Raleigh Township, is close to the break in the Trenton limestone with about 10,000 feet a day.

In the Malahide area, Elgin County, Union Gas Co. No. 6, Lot 17, Concession 5, Malahide Township, is starting. Location is northwest of No. 5 gasser, the discovery well. Union No. 7 is starting in Lot 19, Concession 6 Malahide, north of the discovery.

In the Haldimand field, Union Gas Co. No. 224, Lot 3, Concession 6, Rainham Township, finished at 925 feet with 25,000 feet a day. Union No. 226, Lot 2, Concession 3, Rainham Township, is below 754 feet.

In the Warwick shallow field, Lambton County, W. J. Hussey has finished a test for the Newcomb Syndicate of Detroit on the Arthur Williamson farm, Lot 22, Concession 4, a mile east of Watford. Production in the lower lime at 443 feet is over 30 bbls. a day. A test drilled by William Windover for the Schoolcraft Syndicate on the A. S. Cameron farm, Lot 27, Concession 4, also finished a fair producer. Jerry Hussey No. 2, Thomas Westgate, Sr., farm, Lot 22, Concession 5, finished a good producer around 390 feet. Newcombe Bros. are drilling a deep test on the Dolan-Connelly farm, a mile east of the Warwick salt block. Southeast of Watford, in the north end of Brooke Township, where a small shallow production was encountered a few years ago, a deep test is being drilled by the Wilson-Sullivan Syndicate on the Bowie farm, Lot 24, Concession 12.

Sparta-Wilcox Map

A map of the Sparta-Wilcox trend, now claiming attention of oil operators in the Gulf Coast area, was issued the past week by E. C. Jacobson, Tulsa cartographer. It covers Louisiana, Mississippi, the east portion of Texas and southern Arkansas and shows oil and gas pools in color, with official names. Approximate boundaries of Sparta-Wilcox trend, with pools productive from those zones, are featured. The main structural features, such as the Monroe uplift, Sabine uplift, Angelina-Caldwell flexure and Mobile Tunica flexure, are outlined, and dry holes with elevations and total depths are shown in Mississippi. Size of the map is 46 inches by 50 inches, drawn to scale of 1 inch to 8 miles. Mr. Jacobson will display this map, with those of other oil areas, at the American Association of Petroleum Geologists convention in Oklahoma City, March 22-24.

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.
Crude oil prices at the well effective June 22, 1938

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Ellwood Terrace	Torrance	Richfield	Whittier (E. Coyote) (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills	Buena Vista Hills	Midway-Sunset	Lakeview Area	Lost Hills	Coalinga	Santa Paula*	Wheeler Ridge	Kettleman Hills	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...		$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...		.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...		.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...		.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...		.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.82	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.98	.90	.88	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02				...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06				...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10				...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14				...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18				...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29					...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34					...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	1.28	...	...	...	1.18	1.28	1.20	1.17	1.38					...	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20						...	1.23	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29							...	1.27	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33							...	1.31	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37							...	1.35	...
38-38.9	...	...	...	...	...	...	...	1.56	...		...	...	...	1.36	...	1.42							...	1.39	...
39-39.9	...	...	...	...	...	...	...	1.61	...		...	...	...	1.40	...								...	1.43	...
40-40.9	...	...	...	...	...	...	...	1.66	...		...	...	...	1.43	...								...		...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

Personal Paragraphs

L. E. ULROPE, regional manager of sales, has been elected a vice president and director of the Colonial Beacon Oil Co. He recently assumed the sales management of the company, which operates in New York and New England, after 26 years with affiliated Esso Marketers companies. Mr. Ulrope joined the Standard Oil Co. of New Jersey in 1913 as a delivery boy. Shortly afterwards he became a collector and in 1914 entered sales work. In 1928 he was active in establishing the Standard Oil Co. of Pennsylvania.

R. A. BROWNE, secretary and sales manager of the Pennzoil Co., Oil City, Pa., has returned to his office following two weeks' vacation in Florida.

CECIL HAGEN, geologist for the Superior Oil Co. in Houston, Tex., has been appointed chief geologist for the company, replacing H. M. HORTON, resigned.

J. B. ROGERSON, superintendent of the El Dorado refinery of the Lion Oil Refining Co., has been named superintendent of the Atlas Pipe Line Corp. plant in Shreveport, La., succeeding D. H. CHRISTMAN.

M. ALBERTSON, research engineer with the Shell Petroleum Corp., Houston, Tex., has been reappointed national chairman of the special study committee on well spacing of the central committee on drilling and production practice, Division of Production, American Petroleum Institute.

O. C. BAILEY, independent oil operator of South Arkansas, was elected chairman of the newly formed Arkansas Oil and Gas Commission. Formerly head of the Arkansas Board of Conservation, which the commission replaces under the state's new conservation law, he is aided on the control body by ROBERT SHORT and ED HOLLYFIELD of El Dorado, L. A. LONGINO of Magnolia, and J. D. REYNOLDS of Camden, all former members of the board and reappointed commission members by the governor.

WILL J. REID, president of the Hancock Oil Co.; GEORGE P. DEANE, and ERNEST E. PYLES, vice president; W. T. HANCOCK, treasurer; JOHN W. HANCOCK, secretary, and HARVEY S. HOLLOWAY and C. B. LIMBOCKER, assistant secretaries, have been reelected to their respective offices. The company's headquarters are in Long Beach, Calif.

W. C. FEAZEL, Monroe, La., operator, was awarded a lease last week on the Shreveport, La., municipal golf course. The property comprises 80 acres in the proven area of Shreveport's backyard field. Mr. Feazel, who will be asked to protect the links against damage, pays the city $5,000 cash and one-eighth royalty with a three-sixteenths overriding royalty as long as production on a well is above 150 bbls.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The best wells being found in Illinois are producing from the McClosky lime in Dennison Township, Lawrence County. The wells have good staying qualities.

The 5,776 oil wells in California produce about 318,000 bbls. per day.

Dennis Hastings, 47, noted natural gas executive, bank director and civic worker, dies in Tulsa. He began life as a water boy on a pipe line job, and at the age of 22 was superintendent of the Hope Gas Co. He ended his career with the Oklahoma Natural Gas Co.

20 YEARS AGO

Twenty representative petroleum stocks listed on the New York exchanges averaged $56.43 per share in the week ending March 2.

J. J. Brazill, superintendent of steel tankage for Prairie Oil & Gas Co., dies in Tulsa.

The Okmulgee district, with 145 wells drilling, is the busiest field in Oklahoma, and Butler County, with 172 wells drilling, is the most active Kansas field. The Burkburnett field in Texas, with 402 wells drilling, heads Texas in field work.

Secretary of the Interior Lane reports to a senate committee that 40 per cent of the known oil supply of the United States has been exhausted and that the known reserve of petroleum is 6,740,000,000 bbls., exclusive of shale deposits.

10 YEARS AGO

Kansas operators are now partly convinced that rotary tools may be successfully and economically used to drill wells in that state. Four rotary-drilled wells, just completed in the Wichita area, converted a lot of doubting producers into believers.

J. R. VANDEVER, formerly division superintendent for the Sunray Oil Co. in Wichita Falls, Tex., has been advanced to general superintendent, replacing HARRY MACK, who recently was made a vice president and director.

V. B. EDWARDS, formerly manager of the northern division of Danciger Oil & Refineries, Inc., has been transferred to the Tulsa office as sales manager. He has been in the service of Danciger since 1933. JOE P. BUSSARD, Danciger representative for the past three years in Wisconsin, Iowa and South Dakota, with his office in Minneapolis, succeeds Mr. Edwards. The changes went into effect March 1.

SHIFTS: EDWARD CHRISTMAN, drilling contractor, from Edgewater, Fla., to West Branch, Mich.; D. J. WOODWARD, producer, from Houston, Tex., to San Antonio, Tex.; W. F. DENBOW, superintendent Ohio Oil Co., from Athens, Tex., to Houston, Tex.; OWEN A. WINSOR, engineer Gulf Oil Corp., from Bay City, Mich., to Perry, Okla.; G. T. LACKEY, Jones Associated Oil Co., from Albuquerque, N. M., to Amarillo, Tex.; ARNOLD HEGWER, engineer the Texas Co., from Ponca City, Okla., to Fairfax, Okla.; C. L. BERNARD, superintendent Pure Transportation Co., from Muskogee, Okla., to Tulsa; J. C. MOORE, D'Arcy Exploration Co., from Newark, Notts, England, to Victoria, Tex.; R. S. LUKE, producer, from Tulsa to Mineral Wells, Tex.

FRANK S. PARKER, assistant geologist in Shell's Los Angeles office, has been transferred to St. Louis, Mo., for duty with Shell Petroleum Corp. at that point.

JOHN S. NEILSON, independent oil operator of Houston, Tex., has established offices in Oakdale, Allen Parish, coastal Louisiana, in the new Sparta-Wilcox play.

JOHN W. POOLE, consulting petroleum technologist, of New York, has been named assistant manager of manufacturing by the Lion Oil Refining Co. of El Dorado, Ark.

GEORGE ECHOLS, independent producer and drilling contractor, of Houston, Tex., left for California to take a postponed vacation. He plans to visit the Golden Gate Exposition at San Francisco. Mrs. Echols accompanied him.

GEORGE STRAWN, independent producer of Ardmore, Okla., has been elected president of the Southern Oklahoma Oil and Gas Association. DR. H. B. ALSPAUGH, of Duncan, and WILL H. SMITH, of Ardmore, are new vice presidents. J. R. LANE was relected secretary-treasurer.

JAMES R. DOUGHERTY, Beeville, Tex., president of the Sal Vieja Oil So. and vice president of the Flour Bluff Oil Corp.; S. F. HURLBUT, Corpus Christi, president of the Flour Bluff Oil Corp. and secretary and treasurer of Sal Vieja, and MRS. CHRISTI HEWITT, Beeville, have organized an independent company to operate as H. D. & H., Inc.

MILLARD SMITH, with Anderson-Prichard Oil Corp., Oklahoma City, has been transferred to Shreveport, La., as head of a district office.

J. HURE, managing director of the Societe de Raffinage des Huiles de Petrole, has been elected president of the Association Francaise des Techniciens du Petrole, the French counterpart of the Institute of Petroleum.

SAM GRINSFELDER, of the Union Oil Co. of California for several years in charge of the company's Dominguez geological office, has left Los Angeles for Texas, where he will be in charge of all operations east of the Rockies.

E. E. TOWNES, vice president and general counsel of the Humble Oil & Refining Co., Houston, Tex., has been chosen vice president of the local Young Men's Christian Association, to succeed the late W. W. Fondren, former vice president of Humble.

CLAUDE B. CRUMPLER, attorney of El Dorado, Ark., has been elected chairman of an association formed by lease- and landowners in South Arkansas, to study the new bill on oil production and conservation which is under consideration in the state legislature.

A. J. COYLE, president of the Coyle Concord Oil Co., San Antonio, Tex., was honored at a banquet given by the Chamber of Commerce at Columbia, Tex., for his efforts to prove up an oil field in the Garwood area, near that city. Over a period of several years the company which Mr. Coyle heads has drilled 13 tests in the Garwood area, all failing to find oil in commercial quantities although some have made gas.

He Knows Conservation

"I have learned the meaning of conservation, and I hope to carry to my new work the fundamental principles," said V. E. Cottingham, in resigning as director of production and engineering for the Texas Railroad Commission to become chairman of the North Basin Pools Engineering Committee, in Texas.

V. E. COTTINGHAM

Mr. Cottingham got into oil while he was a student at the University of Oklahoma, from which he graduated with an A. B. in geology. While teaching geology he did one and one-half year's graduate work. Before he joined the commission in 1931 he had gained a wide range of experience, including drilling, scouting, leasing and royalty buying, field reconnaissance, valuation work, subsurface work, and detailed surface mapping. He was district geologist for the Shell Petroleum Corp., in charge of West Texas and Southeast New Mexico, in 1924 and 1925, and then for 17 months was chief geologist for the Exploration Co. of Texas. From 1927 to 1931 he headed the firm Cottingham & Briscoe, which did exploration, valuation, and general consulting work. During seven years' service with the Railroad Commission he prepared a mass of data on pools, proration and gas pressure and became thoroughly informed on all phases of oil conservation.

Mr. Cottingham was born in Birmingham, Ala., 44 years ago. For the past 16 years he has been a resident of Texas, owning his home in San Angelo.

A. D. AITKEN, petroleum engineer with the Stanolind Oil & Gas Co. in the East Texas field, has been transferred to the Houston office, where he will deal with proration problems.

G. B. TUCKER, for several years assistant to the general sales manager of the Seaside Oil Co., Los Angeles, has been appointed advertising manager of the company and in his new position will maintain offices in that city.

T. P. THOMPSON, JR., Bradford, Pa., producer, and J. E. MOORHEAD, executive secretary of the Pennsylvania Grade Crude Oil Association, Oil City, Pa., spent the latter part of February at Hollywood Beach, Fla.

DONALD C. BARTON, president of the American Association of Petroleum Geologists and geologist with the Elmo Oil & Refining Co., of Houston, Tex., addressed the Shreveport Geological Society last week on "The Art of Reading Aerial Photomosaics."

J. GRANT SPRATT, formerly Alberta government petroleum engineer at Calgary, has been named director of each of nine subsidiary companies of Anglo-Canadian Oil Co., replacing FRANCIS P. BYRNE, who will continue as vice president and managing director.

C. J. HAYS, deputy supervisor in the Corpus Christi district for the oil and gas division of the Texas Railroad Commission, has been transferred to Houston, where he succeeds FORD FULLINGHAM, who resigned as deputy supervisor of the Houston district. J. R. LYNE, engineer in the commission's office at Palestine, has been promoted to succeed Mr. Hays at Corpus Christi.

NEVILLE G. PENROSE, independent operator of Fort Worth, Tex., and Mrs. Penrose have announced the arrival of a daughter, Patricia.

MYRL MANNSCHRECK, scout for the Mid-Continent Petroleum Corp. at Midland for the past two years, has been transferred to Louisiana, where he will work out of the company's Shreveport office.

W. H. COREA, general manager of the lubricating division, Socony-Vacuum Oil Co., Inc., New York, is en route to Panama accompanied by Mrs. Corea. They sailed from New York aboard the Santa Maria.

EMIL J. SENNE, safety engineer, has retired from Socony-Vacuum Oil Co., Inc., after completing nearly 48 years of service with the organization. BURTON L. BOYE, manager of the fuel oil, road oil and asphalt department, retired after 40 years of service. R. P. TOBIN, chief engineer and technical adviser in the company's lubricating department, retired with a record of 36 years' service. GEORGE W. MAYTROTT, assistant chief clerk of the manufacturing department, retired after 40 years of service.

H. C. BROWN of Caracas, Venezuela, manager of the North Venezuelan Petroleum Co., sailed from New York last week, returning to South America.

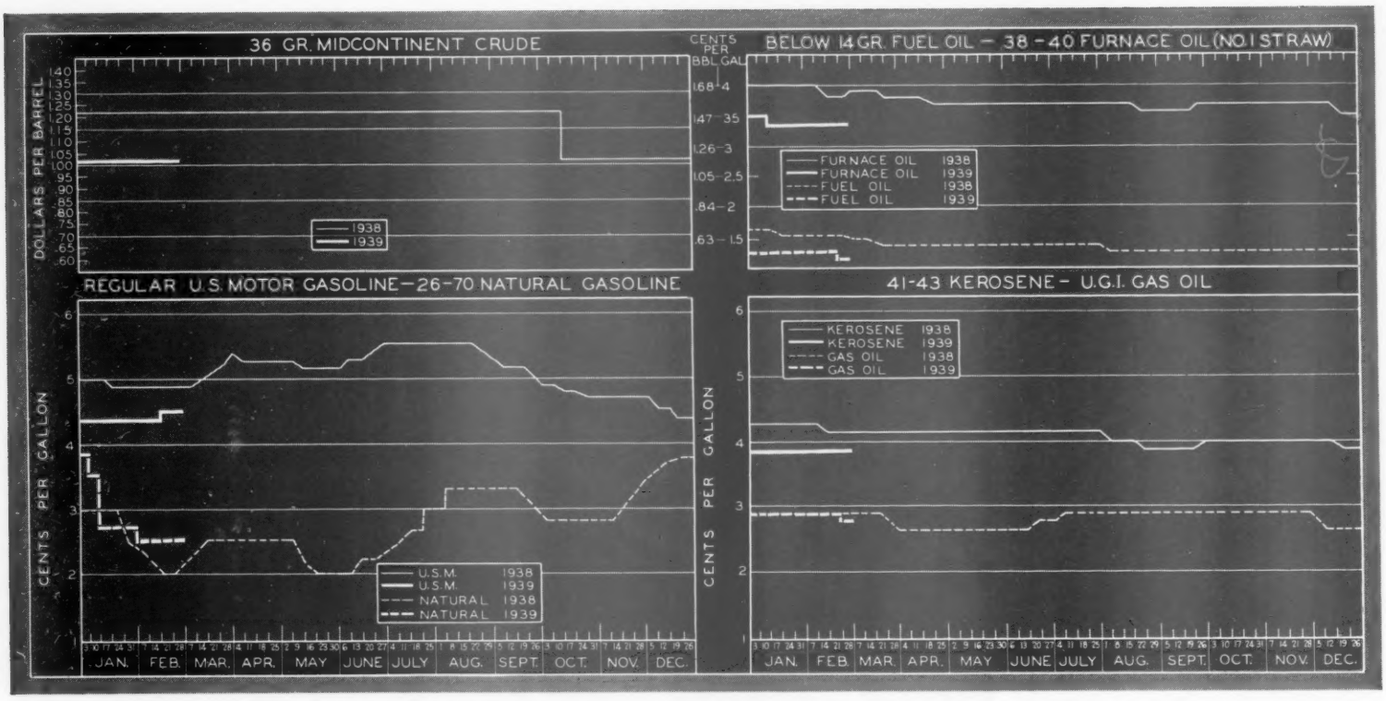
CHARLES F. ROESER, Fort Worth, Tex., president of the Independent Petroleum Association of America; EMMETT MORSE, speaker of the Texas house of representatives, and GUS DYER, professor of economics at Vanderbilt University, Nashville, Tenn., were speakers at the annual meeting of the North Texas Oil and Gas Association in Wichita Falls last Saturday.

WILLIS STORM, geologist for the Petro Royalty Corp., was chosen president of the South Texas Geological Society at its annual election in San Antonio. DALE L. BENSON, Sinclair Prairie Oil Co., was elected vice president and IRA BRINKERHOFF, Stanolind Oil & Gas Co., secretary and treasurer. E. L. PORCH, consulting geologist of San Antonio, was named the fourth member of the executive council. The Corpus Christi branch of the organization held a costume dance in the Plaza Hotel of that city last Saturday night.

JOE C. MAXWELL, Fort Worth, Tex., independent operator, and Mrs. Maxwell sailed last week for a three months' cruise around Africa.

J. W. HERBERT, Fort Worth, Tex., independent operator, accompanied by Mrs. Herbert and their two daughters, has returned from the annual celebration of the Mardi Gras in New Orleans.

HOWELL C. COOPER, who recently retired as president and general manager of the Hope Natural Gas Co., Pittsburgh, Pa., was honored at a dinner in the Duquesne Club last week. Among those invited were R. W. GALLAGHER, vice president of the Standard Oil Co. of New Jersey; FRANK H. LERCH, JR., president of Natural Gas Cos., Inc.; W. A. DOUGHERTY, attorney for the Standard Oil Co. of New Jersey; C. E. GALLAGHER, president of the East Ohio Gas Co.; B. C. COMFORT, vice president of the Mississippi River Fuel Co.; ROBERT W. HENDEE, manager Colorado Interstate Co., and O. C. GERICKE, vice president and general manager Domestic Coke Corp. J. FRENCH ROBINSON, president Peoples Natural Gas Co., presided.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Group 3 Gasoline Gaining Strength in Spite of Unfavorable Statistics

By T. F. SMILEY

Notwithstanding unsatisfactory statistical aspects of the gasoline market, Group 3 refiners manifested growing cheerfulness this week. Prices were firmer, and some of the more optimistic declared an upward revision was likely. Efforts to find a convincing reason for the better feeling did not yield much, though comments in informed quarters indicated belief that the whole business of refinery sales would be on a sounder basis before long.

The manner in which the country's gasoline stocks have been mounting in recent weeks affords no ground for complacency. The week ending February 18 saw 2,125,000 bbls. added to storage, exceeding the addition in the corresponding week of 1938 by 523,000 bbls. In the week just before that stocks were increased 1,801,000 bbls., which was 199,000 bbls. more than went to storage in the comparable week of last year. And at this time in 1938 the refining branch was making a profitless summer more and more certain each day by piling up unneeded supplies.

Mid-Continent Stocks Rising, Too

Mid-Continent refiners have been disposed to feel that their own area was taking little part in any unwise accumulation of gasoline inventories. The fact is Mid-Continent stocks have been rising with about the same degree of rapidity as those in other regions. In the week ending February 18, for example, Mid-Continent refiners added 293,000 bbls. to their stocks.

Major and semimajor companies in the Mid-Continent are reported to be buying gasoline, actuated by one or both of two reasons: It costs them less to buy it than to make it and they can supply certain of their bulk plants more advantageously from other refineries than they can from their own, because of freight rates involved. Evidently these refineries are adding substantially to their own inventories. For the time being, however, the procedure has a steadying effect on the market, since it is offering an outlet for material which otherwise might have difficulty in finding one. Some refiners may be buying at current low prices in the expectation that a stronger market lies ahead and that they will be able to sell at a profit.

A factor in the better tone of the Group 3 gasoline market is the fact that North Louisiana refiners are well sold up. The Atlas Pipe Line Corp. plant in Shreveport, closed for several weeks, is about to resume operation, it was reported.

Natural gasoline was firmer this week than many in the trade had forecast. Brisk jobber buying, along with purchases for the Gulf Coast and a little export business, has provided outlets for material which small plants must ship daily. Almost all the orders have been modest ones, but in the aggregate they have been enough to stave off trouble. The better tone of the refinery gasoline market has benefited the naturals.

Unhappy Outlook for Heating Oils

Heating oils face an unhappy outlook. Mid-Continent refiners entered November with 2,038,000 bbls. of gas oil and distillates in their tanks. So mild has been the winter that 1,817,000 remained February 18 to be disposed of. A bit of encouragement was found in the last week in liberal purchases of No. 1 white and some of the No. 1 straw, supposedly to be used as tractor fuel after introduction of the requisite blend of naphtha. The heaviest accumulations have been in these grades, according to reports.

The lubricant situation is regarded as hopeful. There was 79 days' supply of bright stock in the Mid-Continent area at the opening of February, compared with 71 days' supply a month earlier, but shipments are expected to increase seasonally from now on.

Refined Oil Market Barometer

Rate of increase in gasoline stocks causing concern, though market for the time being is fairly steady in most areas east of California. Heating oil inventories in Mid-Continent are unwieldy, but purchases of the higher gravities for tractor fuel purposes is helping to lessen the likelihood of serious trouble. Pennsylvania lubricants stronger and Mid-Continent market steadier.

MID-CONTINENT. Gasoline increasingly firm. Heating oils soft. Naturals steady.

EAST COAST. Gasoline slightly steadier. Burning oils holding.

GULF COAST. Fuel oils weak. General market dull. Prices unchanged.

PENNSYLVANIA. Gasoline listless. Kerosene up. Bright and steam-refined stocks up.

CALIFORNIA. Gasoline off. Fuel oil weak. General market quiet.

CHICAGO. Better tone in gasoline. Heating oils holding. Heavy fuels steady.

East Coast Petroleum Markets in Between-Season Dullness

By H. STANLEY NORMAN

NEW YORK, Feb. 27.—Petroleum markets last week and for the immediate future appear bobbing in the cross-currents of the approaching change in seasons. In general there were comparatively few changes in the price levels prevailing during the middle of February, but the balance is admittedly delicate and only the future supply situation will determine in which direction the markets will move. Tankcar motor fuel prices along the North Atlantic seacoast were holding the ground to which they have gradually declined during recent weeks. All of the resistance possible has been necessary to avoid further reductions and the problem now becomes one of time unless radical revisions are made in the manufacturing branch.

There were one or two bright spots in the northeastern territory, but they were largely counteracted by equally important developments.

Neutral oils followed bright stocks into higher ground in the western Pennsylvania lubricating oil market and some suppliers there asked higher prices for kerosene. There was a slight stiffening reported in the New York tankcar motor fuel market, but this was difficult to analyze since previously reported lows of 5½ to 5¾ cents for 65-octane gasoline had not been confirmed. Therefore, the current level of 5¾ to 6 cents for 65-octane motor fuel could not be definitely classified as an improvement. However, silencing of the reports of trading at the lower figures may be considered a straw in the wind indicative of stiffer resistance to downward pressure.

A sign of greater importance than the conditions in New York was displayed on the Gulf Coast primary market. Several suppliers were reported quoting export gasoline at figures down an eighth to a quarter of a cent per gallon from previous ranges. The yield to pressure in the export market is considered by some in the trade as the forerunner to a weakening of the domestic situation. So far, however, most of the Gulf Coast suppliers have held their ground on a firmer basis than some expected. The surplus motor fuel stocks in hands of refiners are largely concentrated on the Gulf Coast or in the storage of companies operating plants on the Gulf as well as on the East Coast.

Demand for fuel oil has been substantially at peak winter levels during the past week. Despite the gyrations of temperature from record high readings for this season to subfreezing zones prevailing in the Northeast, the average has been advantageous to burning oil consumption.

In Boston and Providence the kerosene market dipped last week. Most suppliers quoted kerosene in tankcars at Boston and Providence at 4½ cents per gallon, down an eighth to a quarter of a cent per gallon. The cut was the more severe since the two points have been the cores of weakness through most of the winter.

Motor fuel prices improved slightly in Buffalo last week following an advance of a quarter of a cent in the consumer tankcar and a cent on dealer tank-wagon postings February 17 by Socony-Vacuum Oil Co., Inc. The advance raised tankcar prices to 12¼ cents and tank-wagon to 13½ cents, including taxes at Buffalo. The advance, however, simply lifted the Buffalo market to that at Syracuse, Rochester and other northern New York points and was more of a local condition correction than of general improvement.

Inter-refinery buying of neutral Pennsylvania oils has been extremely active during the past 10 days and removal of potential supplies from the near-future market has caused most refiners to increase their quotations by margins of a half to a cent and a half per gallon. The 25-pour test grades range from 14 to 16 cents per gallon, depending on color and viscosity. Bright stocks and other grades of Pennsylvania lubricating oil are holding the gains previously reported and are showing a tendency to move higher, partially out of sympathy with crude oil prices. The recent advances in Pennsylvania crude postings are chiefly responsible for the advance a few suppliers have made of an eighth of a cent per gallon in kerosene quotations. However, the territory served from western Pennsylvania is still in an active burning season and jobbers on the other hand, are looking forward to the spring plowing season when tractor consumption will become an important factor. Most Pennsylvania refiners are now quoting 5 to 5⅛ cents per gallon on kerosene.

Interest in the Gulf Coast export gasoline market has turned upward during the past week. Inquiries are in the market for cargoes for account of French, British and German buyers. It appears the export grades of motor fuel are generally offered at about an eighth of a cent below the prices asked early in February. Part of the responsibility for the lower quotations on the Gulf rests with California manufacturers who supplied two cargoes late in January and early February for French ports at fractionally lower prices, including the greater transportation costs, than prevailed in Texas and Louisiana at the time. The downward adjustment on the Gulf Coast, however, has again turned export buyers to that source of supply. Then, too, the material available for export to Europe on the Pacific Coast is limited, although total motor fuel stocks are upward of 1,000,000 bbls. in excess of economically sound levels. Prices for light fuel oils on the East Coast are virtually unchanged. Most suppliers are asking 4 to 4⅛ cents per gallon in tankcar quantities. Deliveries of No. 2 fuel oil in barges are obtainable, according to talk in the trade, at 3¾ cents with the belief that this figure can be shaded slightly on firm bid. Buyers are ordering out supplies more cautiously with the result terminal operators and jobbers are forced to carry greater quantities of material in storage. Bunker fuel oil remains firm at 95 cents in New York and other nearby ports. Demand is reported satisfactory. Bunker C fuel oil market on the Gulf Coast has stiffened slightly during the past two weeks and the sources of material at 67½ cents per barrel, the low of the range, are growing fewer. Some suppliers on the Gulf are reported asking 70 cents on inquiries who previously were content to quote 67½ cents. Stiffening of the primary market has been reflected in the tankcar and tank-wagon price structure on industrial grades of fuel oil in the New York district. Tank-wagon retailers were reported asking a minimum of 2.65 cents per gallon and a considerable portion of the trade is quoting 2.85 per gallon on current requests for delivery. Until a few days ago 2½ cents was quoted on No. 6 fuel oil by numerous tank-wagon distributors.

The local retail gasoline disturbance prevailing during the first half of February in Philadelphia has been temporarily rectified. Tank-wagon dealer prices were increased a half cent per gallon early last

(Continued on Next Page)

A. P. I. Weekly Refinery Statistics

Week Ending February 25, 1939

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0*	470,000	20,066,000	8,785,000
Appalachian	85.9	114,000	3,449,000	737,000
Indiana, Illinois, and Kentucky	89.5	450,000	14,512,000	5,807,000
Oklahoma, Kansas, and Missouri	81.6	249,000	8,077,000	4,185,000
Inland Texas	50.3	111,000	1,995,000	1,864,000
Texas Gulf	89.5	798,000	10,970,000	7,662,000
Louisiana Gulf	97.3	127,000	2,699,000	1,531,000
North Louisiana and Arkansas	55.0	45,000	538,000	830,000
Rocky Mountains	54.2	42,000	1,760,000	705,000
California	90.0	426,000	15,421,000	98,515,000
Total reported	85.8	2,832,000	79,487,000	130,621,000
Estimated unreported	.....	353,000	5,110,000	3,050,000
*Estimated total	.....	3,185,000	84,597,000	133,671,000
*Estimated total previous week	.....	3,125,000	83,075,000	135,096,000
*February 26, 1938	.....	3,149,000	91,594,000	121,123,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending February 18, 1939	272,052,000 barrels
Week ending February 11, 1939	271,553,000 barrels
Week ending February 19, 1938	305,219,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of February 28, 1939

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank-wag.	Dlr.	Inc. tax	tank-wag.
Chicago, Ill.	15.1	12.1	4.0	10.0
Decatur	15.1	12.6	4.0	10.0
Joliet	15.1	12.6	4.0	10.0
Peoria	15.1	13.1	4.0	10.0
Quincy	14.9	12.9	4.0	8.7
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	8.9
Minneapolis	16.0	14.5	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.0	5.0	10.3
Milwaukee	14.9	13.4	5.0	10.2
Detroit, Mich.	13.1	11.6	4.0	7.1
Grand Rapids	14.0	12.5	4.0	9.7
Saginaw	15.8	14.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†10.0
South Bend	17.1	15.6	5.0	†9.0
Fargo, N. D.	16.7	15.2	4.0	11.6
Minot	18.0	16.5	4.0	12.9
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	11.9	4.0	7.5
St. Louis*	14.2	12.7	4.0	8.0
St. Joseph	14.4	11.2	4.0	9.3
Wichita, Kans.	13.9	10.6	4.0	7.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective February 15, 1939, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8 cents; 150 gallons and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8.25 cents; 150-399 gallons, 7.25 cents; 400 gallons and over, 6.75 cents. Stanolex furnace oil, 1-149 gallons, 8.25 cents; 150-399 gallons, 7.25 cents; 400 gallons and over, 6.75 cents. Stanolex Grade A, 1-399 gallons, 5 cents; 400 gallons and over, 4 cents. Stanolex Grade B, 1-799 gallons, 4.75 cents; 800 gallons and over, 3.75 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank-wag. con'r.	Dlvided dlr.	Inc. tax	tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Cons'r tank-wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	18.5	15.5	7.0	8.5
Augusta	19.5	16.5	7.0	9.0
Macon	18.0	15.0	7.0	10.0
Savannah	17.5	14.5	7.0	8.0
Birmingham, Ala.	20.0	17.0	8.0	8.5
Mobile	21.0	18.0	9.0	8.5
Montgomery	21.0	19.0	9.0	10.5
Jackson, Miss.	17.5	14.5	7.0	9.5
Vicksburg	19.0	16.0	7.0	9.0
Jacksonville, Fla.	20.0	17.0	8.0	8.0
Miami	18.5	15.5	8.0	8.0
Pensacola	21.0	18.0	9.0	8.0
Tampa	19.0	16.0	8.0	8.0
Lexington, Ky.	19.0	16.0	6.0	10.0
Covington	17.5	14.5	6.0	9.5
Louisville	17.5	14.5	6.0	9.0
Paducah	18.5	15.5	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallon discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Cons. tank-car	Dlr. tank-wag.	Inc. tax	tank-wag.
Atl'tic City, N. J.	10.9	12.7	4.0	8.0
Newark	10.9	12.7	4.0	8.0
Annapolis, Md.	12.85	14.35	5.0	9.5
Baltimore	12.25	13.75	5.0	8.5
Cumberland	13.65	16.15	5.0	10.0
Wash'gton, D. C.	10.50	12.0	3.0	9.5
Danville, Va.	14.45	16.95	6.0	12.9
Norfolk	13.25	15.75	6.0	11.5
Petersburg	13.55	16.05	6.0	11.7
Richmond	13.55	16.05	6.0	8.7
Roanoke	14.75	17.25	6.0	11.0
Charles'n, W. Va.	14.05	16.55	6.0	12.6
Parkersburg	13.35	14.85	6.0	11.2
Wheeling	14.35	15.75	6.0	12.2
Charlotte, N. C.	15.65	18.15	7.0	12.1
Hickory	16.15	18.65	7.0	12.5
Mt. Airy	15.95	18.45	7.0	12.3
Raleigh	15.25	17.75	7.0	11.6
Salisbury	15.75	18.25	7.0	12.2
Charleston, S. C.	14.25	16.75	7.0	10.6
Columbia	15.25	17.75	7.0	11.6
Spartanburg	15.95	18.45	7.0	12.4

Price basis to Essolene undivided dealers: Dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To coutract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gallons or more, consumer tank-wagon price. Single deliveries of less than 50 gallons, 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less .5 cent per gallon. The above policy also applies in South Carolina effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Pennsylvania, Delaware, and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Cons. tank-car	Dlr. tank-wag.	Inc. tax	tank-wag.
Philadelphia, Pa.	12.0	13.0	5.0	10.0
Pittsburgh	13.0	15.0	5.0	10.5
Allentown	12.75	14.25	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton	13.0	14.5	5.0	10.5
Altoona	13.0	15.0	5.0	10.5
Dover, Del.	...	13.5	5.0	10.5
Wilmington	...	12.5	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Cons. tank-car	Dlr. tank-wag.	Inc. tax	tank-wag.
Albany	11.5	13.8	5.0	8.0
*Met. N. Y.:				
Manhat., Bronx	11.5	12.9	5.0	8.0
Staten Island	11.5	12.9	5.0	8.0
Queens, Br'klyn	11.5	12.9	5.0	8.0
Buffalo	12.25	13.5	5.0	7.5
Rochester	12.5	13.5	5.0	7.5
Syracuse	12.0	13.5	5.0	8.5
Boston, Mass.	10.25	12.3	4.0	7.0
Portland, Me.	11.5	13.5	5.0	7.5
Manchester, N. H.	12.1	14.1	5.0	8.0
Burlington, Vt.	12.0	14.2	5.0	9.0
Springfield, Mass.	10.75	12.8	4.0	7.5
Worcester	10.75	12.8	4.0	7.5
Hartford, Conn.	10.75	12.8	4.0	6.5
New Haven	10.75	11.5	4.0	6.0
Providence, R. I.	10.25	12.3	4.0	7.0

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Denver, Colo	15.0	5.0	11.5
Grand Junction	16.0	5.0	15.0
Pueblo	13.0	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	15.0	5.0	13.0
Billings, Mont.	18.0	6.0	13.0
Butte	19.5	6.0	15.5
Great Falls	18.0	6.0	15.5
Helena	19.0	6.0	15.5
Salt Lake City, Utah	16.0	5.0	16.0
Boise, Idaho	19.0	6.0	18.0
Twin Falls	19.5	6.0	18.0
Albuquerque, N. M.	16.0	*6.5	10.0

*Includes city tax of .5 cent.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Cons. tank-car	Dlr. tank-wag.	Inc. tax	tank-wag.
New Orleans, La.	16.75	19.25	*10.0	†11.0
Baton Rouge	14.75	17.25	8.0	‡10.5
Alexandria	14.75	17.25	8.0	‡12.5
Lafayette	15.00	17.50	8.0	‡12.5
Lake Charles	14.75	17.25	8.0	‡12.5
Shreveport	13.50	16.00	8.0	‡11.0
Knoxville, Tenn.	18.00	20.50	8.0	14.5
Memphis	16.00	18.50	8.0	12.5
Chattanooga	17.50	19.00	8.0	14.0
Nashville	17.00	19.50	8.0	12.0
Bristol	18.25	15.25	8.0	14.5

Essolene at dealer price less .5 cent per gallon to undivided dealers.

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gallons, consumer tankcar plus 2 cents per gallon; 50 to 199 gallons, consumer tankcar plus 1 cent per gallon; 200 gallons and over, consumer tankcar plus .5 cent per gallon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank-wag.	Dlr.	Inc. tax	tank-wag.
Omaha	17.5	14.5	6.0	10.3
McCook	17.5	15.5	6.0	10.0
Norfolk	17.9	14.9	6.0	10.7
North Platte	18.3	15.4	6.0	11.0
Scottsbluff	17.0	14.9	6.0	11.2

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Texarkana, Ark.	12.0	5.0	8.0
Fort Smith	13.25	5.0	7.5
Little Rock	16.75	7.5	9.0
Muskogee, Okla.	13.0	5.0	7.0
Oklahoma City	10.5	5.0	6.0
Tulsa	10.0	5.0	6.0

Texas

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	11.0	15.0	5.0	7.0
Fort Worth	11.0	15.0	5.0	8.0
Houston	13.0	17.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	23.5	10.0	17.5
St. John, N. B.	23.5	10.0	17.5
Montreal, Que.	20.0	6.0	14.5
Toronto, Ont.	21.0	6.0	15.5
Hamilton, Ont.	21.0	6.0	15.5
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. of Louisiana February 20 reduced dealer tank-wagon gasoline in Chattanooga 1 cent.

Socony-Vacuum Oil Co., Inc., February 17 advanced consumer tankcar gasoline .25 cent and tank-wagon dealer gasoline 1 cent in Buffalo.

New York Market

(Continued from Preceding Page)

week to 8 cents per gallon, exclusive of taxes. The improvement was extended to Wilmington, Del., bringing tank-wagon prices there to a par with the Philadelphia structure. Numerous northern Pennsylvania and southern New Jersey points remain in the subnormal group where prices for regular gasoline range down to as low as 13.9 cents per gallon.

W. C. Spooner, consulting geologist, of Shreveport, La., is in Washington, D. C., this week.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of February 28, 1939

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below	.03½	.03⅝
63-66 octane	.04	.04½
67-69 octane	.04½	.04⅝
70-72 octane (regular)	.04½	.04⅝
60-62 400 grades:		
62 octane and below	.03½	.03⅝
63-66 octane	.04	.04½
67-69 octane	.04½	.04⅝
70-72 octane (regular)	.04½	.04⅝
64-66 375	.04	.04¼
68-70 360	.05	.05¼

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.03½	.03⅝
63-66 octane	.04	.04½
67-69 octane	.04½	.04⅝
70-72 octane (regular)	.04½	.04⅝
60-62 400	.03½	.03⅝
64-66 375	.04	.04¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04	.04¼
63-66 octane	.04¼	.04½
67-69 octane	.04½	.04¾
70-72 octane (regular)	.04⅞	.05⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below		.04
67-69 octane	.05	.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.03⅝	.03⅞
63-66 octane	.03⅞	.04⅛
67-69 octane	.04⅛	.04⅜
70-72 octane	.04⅜	.04⅝
60-62 400 grades:		
62 octane and below	.03⅝	.03⅞
63-66 octane	.03⅞	.04⅛
67-69 octane	.04⅛	.04⅜
70-72 octane	.04⅜	.04⅝
64-66 375	.04	.04¼
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04¼	.04¾
65 octane		.06¼
68-70 octane		.06½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 65 and above:		
*New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Baltimore	.06	.06¼
Charleston, S. C.	.06½	.06¾

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane		.04¼
60-64.9	.04½	.04⅝
65 octane and higher		.04⅝
68-70	.04⅞	.05⅛

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¼	.04½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02½
Grade 18-55		.03

NORTH TEXAS—

Grade 26-70	.02⅝	.02½
Grade 18-55	.02¾	.02⅞

CALIFORNIA—

75-85 375-390	.06½	.07

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.02¾

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03¾	.03⅞
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.04	.04¼
46-48 gr., 210-230 l.b.p., 480-max., e.p.	.04⅝	.04⅝

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅞	.04
42-44	.04⅛	.04¼

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43		.04⅛

ARKANSAS (Ark. and N. La. del.)—

41-43		.04½

PENNSYLVANIA (inland refineries)—

45	.05	.05½
46	.05½	.05¾
47	.05¾	.05⅞

CHICAGO (Based on Group 3)—

41-43	.03⅞	.04⅛
42-44	.04⅛	.04⅜

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04¾	.05¾

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04⅞

***GULF COAST (domestic)—**

41-43	.03⅞	.04⅛

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅝	.03¾
No. 1 prime white, 38-42	.03½	.03⅝
No. 1 straw, 38-40	.03⅜	.03½
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03⅛	.03¼
No. 3 zero to 15, 28-32	.03	.03¼
No. 3, 15 and above, 28-32	.02⅞	.02⅞

NORTH TEXAS—

No. 1 prime white, 38-42	.03½	.03⅝
No. 1 straw, 38-40	.03⅜	.03½

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03⅜	.03⅝

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅝	.03¾
No. 1 prime white, 38-40	.03½	.03⅝
No. 1 straw, 38-40	.03⅜	.03½
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03⅛	.03¼
No. 3, zero to 15, 28-32	.03	.03¼
No. 3, 15 and above, 28-32	.02¾	.02⅞

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.45	.55

NORTH TEXAS—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low pourpoint, 24-28	1.00	1.10
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.45	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.04¼	.04⅝

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.35
24 plus Diesel, per bbl.	1.00	1.30
24 plus Diesel (bunkers)	1.15	1.50
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.60	.80
12-17 (tankcars)	.50	.80
10-17 (high sulfur)	.45	.70
San Joaquin Valley:		
10-18 (tankcars)	.50	.80
24 plus Diesel, per bbl.	1.15	1.40
San Francisco:		
24 plus Diesel, per bbl.	1.40	1.45
24 plus Diesel (bunkers)	1.45	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel	.03⅜	.03⅝
43-47 Diesel	.03½	.03⅝
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunker C (bulk cargoes)	.67½	.70
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04
28-30 Diesel (lighterage 6¼c per bbl.)		1.65
28-30 Diesel (tankcars)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)		.03¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14¼	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.17½	.18½
15 pourpoint	.16½	.17½
25 pourpoint	.15	.15½
Steam refined:		
600	.08	.08½
650	.09	.10½
600	.10½	.11
600 Warren E filtered	.13	.13½

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 pourpoint:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08¼	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¾	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pourpoint	.16	.16½
10 pourpoint	.15	.15½
15 pourpoint	.14	.14½
25 pourpoint	.13	.13½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.18	.18¾
10 pourpoint	.17	.17½
15 pourpoint	.16	.16½
25 pourpoint	.15	.15½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.0245	.0250

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0245	.0250
124-126 (a.m.p.) w.c. scale	.0250	.0255

NEW YORK—

Wax in bags fully refined:	
122-125 (a.m.p.) wax	.0350
125-127 (a.m.p.) wax	.0360
128-130 (a.m.p.) wax	.0375
130-132 (a.m.p.) wax	.0435
133-135 (a.m.p.) wax	.0465
135-137 (a.m.p.) wax	.0490
124-126 (a.m.p.) w.s.	.0245
124-126 (a.m.p.) y.s.	.0240
Petrolatum in barrels, carload lots:	
Dark green	.02 .02½
Amber	.02¾ .02½
Extra amber	.02¾ .02¾
Lily white	.05½ .05¼
Snow white	.06¼ .06¼
Cream	.04⅛ .04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¼	.04⅜
60-62 400	.04¼	.04⅜
61-63 390	.04⅜	.04⅝
64-66 375	.04½	.04⅝

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.04½	.04¾
65-69 octane	.04¾	.05
Above 69 octane	.05	.05½

KEROSENE

GULF COAST—

41-43 prime white	.03⅞	.04⅛
41-43 water white	.03⅞	.04⅛

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0245	.0250
124-126 y.s.	.0245	.0250

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)*	$1.10
Van, Tex. (Oct. 11, 1938)*	.93
Talco, Tex. (Oct. 11, 1938)*	.55
Rodessa, Tex.	
See North Louisiana gravity schedule	
Cass and Panola counties, Texas	
See gravity schedule	
Altus and Tipton†	See note below
Cayuga, Tex. (Oct. 12)	.81
Clay Creek, Tex.	.85

*Humble Oil & Refining Co. †Gulf Refining Co. Pure Oil Co.'s Van price, 93 cents, effective Oct. 13, 1938.

Altus and Tipton, Okla., starting at below 25 degrees at 71 cents, 2-cent spread to 40 degrees and above at $1.03. East Texas price met by all buyers posting prices. Talco price adopted by Talco Pipe Line on October 11. Cayuga posted by Tide Water Associated Oil Co. Clay Creek posted by Sun Oil Co.

Southwest Texas

Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)*	$ .96
Pettus (Oct. 11, 1938)*	1.29
Flour Bluff (Dec. 3, 1938)*	1.23
Darst Creek (Oct. 12, 1938)†	.96
Darst Creek and Bruner (Oct. 13, 1938)‡	.96
Luling (Oct. 12, 1938)†	.87
Lytton Spings (Oct. 12, 1938)†	.99
Mirando (Oct. 12, 1938)†	
Government Wells (Oct. 13, 1938)	
See note below	

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20 gravity, 77 cents, 3-cent spread to 24-24.9 at 89 cents.

Gulf Coast

Conroe, Tex. (Oct. 11, 1938)*	$1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)†	See note below
Gibson, La. (Oct. 11, 1938)†	1.04
Garden Island, La. (Oct. 12, 1938)‡	1.24
Lafitte, La. (Oct. 12, 1938)‡	1.04
Cleveland, Tex. (Oct. 12, 1938)‖	1.14
Hardin, Tex. (Oct. 12, 1938)‖	1.02
Tepetate, La. (Oct. 11, 1938)§	1.03
Villa Platte, La. (Oct. 11, 1938)§	1.03
Abbeville, La. (Jan. 1, 1939)§	
See note below	
Bosco, La. (Dec. 3, 1938)‖	.93
Creole, La. (Oct. 13, 1938)‖	.96
Gueydan, Sweet Lake, and Louise, La. (Oct. 13, 1938)‖	See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 13, 1938)**	
Long Lake, Tex. (Oct. 13, 1938)**	1.08
Segno and Wing (Oct. 13, 1938)**	
See note below	
Livingston (Oct. 11, 1938)†	1.10
Gibson, La. (Oct. 11, 1938)†	1.04

*Humble Oil & Refining Co. †Shell Pe- *Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)*	$ .92
Elk Basin, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, light, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, heavy (Oct. 11, 1938)†	.40
Lance Creek, Wyo. (Oct. 11, 1938)*	.77
Rock Creek, Wyo. (Oct. 11, 1938)*	1.00
Iles, light, Colo. (Oct. 11, 1938)†	.98
Iles, heavy, Colo. (Oct. 11, 1938)†	.92
Dutton Creek, Wyo. (Oct. 11, 1938)†	
See note below	
Frannie, light, Wyo. (Oct. 11, 1938)†	.55
Frannie, heavy, Wyo. (Oct. 11, 1938)†	.42
Hamilton dome, Wyo. (Oct. 11, 1938)†	.35
Midway, Wyo. (Oct. 11, 1938)†	
See note below	
Salt Creek Tensleep crude, Wyo. (Oct. 11, 1938)†	.646
Salt Creek (Oct. 11, 1938)	See note below
Canon City, Colo. (Oct. 11, 1938)‡	.90
Florence, Colo. (Oct. 11, 1938)‡	.90
Cat Creek, Mont. (Oct. 11, 1938)‡	1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡	.98
Lance Creek, Wyo. (Oct. 11, 1938)‡	.77
Lea County, N. M.	
See West Texas gravity schedule‡	
Artesia, Jackson and Maljamar	
See gravity table‡	
Fort Collins and Wellington, Colo.	
See gravity table‡	
Eddy County, N. M. (October 11, 1938)‖	.77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. ‖Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crude start at below 29 degrees, 86 cents, 2 cents spread to 40 and over at $1.10. Salt Creek crude excepting Tensleep, takes Standard Oil Co. of Indiana Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective October 11, discontinued posting prices in Greybull-Torchlight, Wyo., and Hogback and Hospah, N. M.

Eastern States

SOUTH PENN OIL CO.

(Effective February 1, 1939)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.88
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.53
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.47
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.45
Corning Grade Oil in Buckeye Pipe Line Co. line (Jan. 24)	1.02

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO.

(Effective February 1, 1939)

Bradford, Pa.	$1.88
Allegany, N. Y.	1.88

PENNZOIL CO.

Group A	$1.83
Group B	1.82

troleum Corp. ‡Texas Co. ‖Continental Oil Co. ¶Magnolia Petroleum Co. ‖Pure Oil Co. **Gulf Refining Co.

Black Bayou, etc., starts at below 20 degrees at 79 cents; 20-20.9, 81 cents; 21-21.9, 83 cents, then a 3-cent spread to 26-26.9 degrees, 98 cents, and 27 degrees and over $1. Abbeville starts at below 36 degrees, 92 cents, 2-cent spread to 40 degrees and over at $1.02. Gueydan, etc., starts at below 20 degrees, 79 cents, 3-cent spread to 26-26.9 degrees at $1, and 2-cent spread to 40 degrees and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 18 gravity, 76 cents, 2-cent spread to 20-20.9 at 82 cents; then a 3-cent spread to 26-26.9 at $1; then a 2-cent spread to 34 degrees and over at $1.16.

North Louisiana and Arkansas

Smackover, Ark. (Oct. 5, 1938)*	$ .73
Buckner, Magnolia, and Village, Ark. (Oct. 5, 1938)*	See note below
Schuler, Jones sand	See note below
Tullos and Urania	.89
Cotton Valley, La. (distillate) (Dec. 23, 1938)*	1.20
Lisbon, La. (Sept. 19, 1938)	
See note below	

*Smackover posted by Standard Oil Co. of Louisiana, October 5, 1938; by Magnolia Petroleum Co., October 12; by Gulf Refining Co., October 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

Schuler Jones sand schedule starts at below 25 degrees, 66 cents, with 2-cent spread to 40 and over at 98 cents; by Lion Oil Refining Co. on October 5, 1938; Schuler light Morgan sand crude takes North Louisiana gravity scale along with El Dorado and Champagnolle; by Lion Oil Refining Co., October 5; Buckner, Magnolia, and Village schedules posted by Standard Oil Co. of Louisiana and Lion Oil Refining Co. on October 5; quote same prices as for Schuler Jones sand crude.

Middle Western States

OHIO OIL CO.

(Effective October 13, 1938)

Lima, Ohio	$ .90
Illinois old fields	1.05
Illinois basin	1.15
Princeton, Ind.	1.05
Western Kentucky	1.10
Greendale, Porter, and Crystal, Mich. (Jan. 6, 1939)*	.92½
Buckeye, Bentley, Edenville, Beaverton, Mich. (Jan. 6, 1939)*	.90
Freeman-Redding, Mich, (Jan. 6, 1939)*	.82
West Branch and Arenac, Mich. (Dec. 13, 1938)*	.70
Allegan (Jan. 6)	.78
Bloomingdale (Dec. 19)	.84
Muskegon	1.00
Sherman, Mich. (Dec. 13, 1938)‡	.82
Eastern Kentucky:	
Big Sandy River†	1.12
Kentucky River†	1.20
Group C	1.61
Group D	1.80
Group E	1.78

PURE OIL CO.

(Effective February 1, 1939)

West Virginia	$1.47

West Texas

See gravity table.

Pecos County (Oct. 11, 1938)*	$ .78
Pecos shallow (Oct. 11, 1938)†	.65

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Canada

Ontario (Oct. 25, 1938)*

Petrolia	$1.99
Oil Springs	1.97

TURNER VALLEY

(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Rocky Mountain Runs

Production estimates for the week ended February 25 follows:

WYOMING

	Bbls.
Salt Creek	15,240
Big Muddy	1,260
Badger Basin	180
Cody Dome	70
Cole Creek	110
Dallas Derby	350
Dewey Dome	10
Dutton Creek	40
Elk Basin	560
Frannie	730
Garland	1,910
Grass Creek	1,850
Hidden Dome	90
Hudson	220
LaBarge	930
Lance Creek	12,800
Lost Soldier	1,780
Mahoney	230
Medicine Bow	2,220
Mule Creek	200
Midway	20
Oregon Basin	1,890
Osage	780
Quealy Dome	760
Rex Lake	10
Rock River	3,300
Spindletop	40
Poison Spider	270
Teapot	10
Warm Springs	120
Wertz	1,290
Total Wyoming	49,270

MONTANA

Border	120
Cat Creek	580
Cut Bank	8,130
Dry Creek	330
Kevin-Sunburst	3,290
Lake Basin	10
Pondera	700
Total Montana	13,160

COLORADO

Florence	130
Fort Collins and Wellington	300
Wilson Creek	350
Iles Dome	2,010
Moffat	420
Orchard	30
Rangely	20
Tow Creek	120
Price	470
Total Colorado	3,850

NEW MEXICO

Cooper	4,150
Eaves	790
West Eunice	100
Eunice	22,260
Hardy	3,050
Hobbs	12,900
Jal	940
Langlie	4,690
Lynch	500
Lynn	800
Mattix	3,500
Monument	22,880
North Lynch	40
Penrose	5,590
Rhoades	140
Skaggs	120
Skelly	1,900
South Eunice	3,150
South Lovington	150
Vacuum	7,300
Artesia-Maljamar	8,520
Getty	100
Hogback	200
Rattlesnake	540
Table Mesa	60
Total New Mexico	104,370
Total Rocky Mountain region	170,650

Crude Prices by Gravities

	1 Oklahoma	2 Oklahoma and Kansas	3 North and Central Texas	4 Louisiana and Arkansas	5 East Central Texas	6 Gray County, Texas	7 Hutchinson and Carson counties, Texas	8 Raccoon Bend, Satsuma and Tomball, Texas	9 West Texas and Lea County, N. M.	10 Fort Collins and Wellington, Colo.	11 Anahuac and Dickinson, Mirando, Duval, Texas.	12 Refugio, Texas	13 Gulf Coast Texas	14 Cass and Panola counties, Texas	15 Beaumont and West Beaumont, Texas	16 Lockport, Iowa, Cameron Meadows, Louisiana	17 Artesia, Jackson and Maljamar, N. M.	18 Iowa, Louisiana
Below 18																.74		.75
18-18.9									.53		.74	.79	.79			.76		.77
19-19.9									.53		.74	.79	.79		.79	.78		.79
20-20.9	.60	.70							.55		.77	.82	.82		.82	.80		.81
21-21.9	.63	.72							.57		.80	.85	.85		.85	.82		.83
22-22.9	.66	.74						.95	.59		.83	.88	.88		.88	.85		.86
23-23.9	.69	.76			.78			.97	.61		.86	.91	.91		.91	.88		.89
24-24.9	.72	.78	.71		.80			.99	.63		.89	.94	.94		.94	.91		.92
Below 25				.73										.73				
25-25.9	.75	.80	.73	.75	.82			1.01	.65		.92	.97	.97	.75	.97	.94		.95
26-26.9	.78	.82	.75	.77	.84			1.03	.67		.95	1.00	1.00	.77	1.00	.97		.98
27-27.9	.81	.84	.77	.79	.86			1.05	.69		.97	1.02	1.02	.79	1.02	.99		1.00
28-28.9	.84	.86	.79	.81	.88	.72	.67	1.07	.71	.81	.99	1.04	1.04	.81	1.04	1.01	.61	1.02
29-29.9	.87	.88	.81	.83	.90	.74	.69	1.09	.73	.83	1.01	1.06	1.06	.83	1.06	1.03	.63	1.04
Below 30																		
30-30.9	.90	.90	.83	.85	.92	.76	.71	1.11	.75	.85	1.03	1.08	1.08	.85	1.08	1.05	.65	1.06
31-31.9	.92	.92	.85	.87	.94	.78	.73	1.13	.77	.87	1.05	1.10	1.10	.87	1.10	1.07	.67	1.08
32-32.9	.94	.94	.87	.89	.96	.80	.75	1.15	.79	.89	1.07	1.12	1.12	.89	1.12	1.09	.69	1.10
33-33.9	.96	.96	.89	.91	.98	.82	.77	1.17	.81	.91	1.09	1.14	1.14	.91	1.14	1.11	.71	1.12
34-34.9	.98	.98	.91	.93	1.00	.84	.79	1.19	.83	.93	1.11	1.16	1.16	.93	1.16	1.13	.73	1.14
Below 35																		
35-35.9	1.00	1.00	.93	.95	1.02	.86	.81	1.21	.85	.95	1.13	1.18	1.18	.95	1.18		.75	
36-36.9	1.02	1.02	.95	.97	1.04	.88	.83	1.23	.87	.97	1.15	1.20	1.20	.97	1.20		.77	
37-37.9	1.04	1.04	.97	.99	1.06	.90	.85	1.25	.89	.99	1.17	1.22	1.22	.99	1.22		.79	
38-38.9	1.06	1.06	.99	1.01	1.08	.92	.87	1.27	.91	1.01	1.19	1.24	1.24	1.01	1.24		.81	
39-39.9	1.08	1.08	1.01	1.03	1.10	.94	.89	1.29	.93	1.03	1.21	1.26	1.26	1.03	1.26		.83	
40 and over	1.10	1.10	1.03	1.05	1.12	.96	.91	1.31	.95	1.05	1.23	1.28	1.28	1.05	1.28		.85	

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1939 High	1939 Low	Week ending Feb. 25 High	Week ending Feb. 25 Low	Week ending Feb. 25 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1937	Com. sh. earn. 1936	1938 High	1938 Low	1937 High	1937 Low
69½	61	61¾	60¼	61⅛	Amerada Corp.	788,675	N.P.	50cQ	10-31-38	$2.00	$3.04	$2.52	78	55	111⅞	51½
23½	20⅞	21¾	20⅞	21¾	Atlantic Refining	2,663,999	$25	25cQ	3-15-39	1.00	3.51	2.59	27⅜	17¾	37	18
21½	15⅝	18¼	17⅛	18	Barber Asphalt Co.	390,223	$10	75c	12-16-37	....	1.91	1.14	23¾	12⅛	43⅜	10⅛
19½	14⅜	16	14¾	16	Barnsdall Oil Co.	2,250,344	$5	25cQ	2-1-39	1.00	0.85	1.01	21⅜	10⅛	35¼	10
9¼	8	8¾	8⅜	8¾	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	2-15-39	.80	1.48	1.18	10¾	7	17⅞	7
31½	26¼	27	26⅜	26¾	Continental Oil of Delaware	4,682,583	$5	25cQ	3-31-39	‖1.00	2.98	2.05	35¾	21¼	49	24
8⅜	6½	7⅛	6½	7⅛	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	0.94	—0.03	9¾	5	17⅝	4¾
16½	13⅝	14⅞	14⅛	14¾	Mid-Continent Petroleum	1,857,912	$10	35c	12-1-38	.60	2.86	2.57	22⅝	12¼	35⅜	14
14⅞	12¾	13	12¾	12¾	Mission Corporation	1,382,945	$10	$1	6-29-38	1.00	1.31	0.48	17¾	10⅝	34	15
15½	11⅝	12¾	12	12⅝	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	....	4.90	2.02	23	12½	41⅜	17⅝
10¼	8⅝	9	8¾	9	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	.20	1.30	0.70	14⅞	8⅞	22⅞	8
11⅞	10⅜	10⅜	10⅜	10⅜	Pacific Western Oil	1,000,000	N.P.	50c	12-20-38	.50	1.39	1.58	15⅞	10¼	29¾	11⅜
6¾	6¼	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	....	1.18	0.52	9¼	6¼	17⅛	7
43¾	37⅛	39¼	38	39¼	Phillips Petroleum	4,449,052	N.P.	50cQ	3-1-39	‖2.00	5.42	4.02	44⅜	27¼	64	30⅛
22½	20¼	21⅜	20⅜	20⅞	Plymouth Oil Co.	1,029,800	$5	35cQ	12-12-38	1.40	2.85	1.65	25⅜	15	29⅞	13
11¼	8¾	9⅝	9⅛	9½	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	....	2.15	1.63	13½	8¼	24⅜	8¾
10¼	8⅝	9¼	9⅛	9⅛	Richfield Oil Corp.	3,896,638	N.P.	50c	12-21-38	.50	0.35	...	9⅞	5	6½	4⅛
22⅜	19	20½	19½	20½	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	12-15-38	1.00	1.97	2.00	27½	15½	54⅛	16
15⅛	11¾	13½	12⅝	13½	Shell Union Oil	13,070,625	N.P.	35c	12-20-38	.70	1.44	1.57	18⅝	10	34¾	14⅞
29½	21	25	23⅞	24¾	Skelly Oil	1,003,949	$15	50c	12-15-38	1.60	6.07	4.42	34¾	18½	60⅝	26½
13¾	12	12¾	12⅛	12⅜	Socony-Vacuum	31,151,071	$15	25c	9-15-38	.50	1.82	1.38	16⅝	10¾	23¼	13
29¼	26¾	28	27⅝	27⅞	Standard Oil of California	13,014,754	N.P.	30cQ†	3-15-39	1.40	3.17	1.79	34⅞	25⅛	50	27⅛
29⅛	26⅛	27⅛	26⅛	27	Standard Oil (Indiana)	15,267,030	$25	25cQ	3-15-39	1.00	3.66	3.09	35½	24¾	50	26½
50⅜	50⅜	..	..	..	Standard Oil of Kansas	112,837	$10	$2	12-8-38	2.00	6.93	1.91	50⅛	32½	43	30⅝
53¼	47¼	49	47⅞	48½	Standard Oil of New Jersey	26,224,767	$25	50c§	12-15-38	§1.50	5.64	3.73	58⅜	39¾	76	42
66	55	61¼	60	61	Sun Oil	2,316,484	N.P.	25cQ	3-15-39	1.00	3.86	3.25	65⅛	45	77½	44½
3¼	2⅝	2⅞	2⅝	2¾	Superior Oil Corp.	1,388,079	$1	10c	12-28-38	.10	0.32	0.14	4¼	1¾	7¾	1½
48¼	42¼	44¼	43	43⅞	Texas Corp.	10,875,006	$25	50cQ	4-1-39	2.00	5.02	4.10	49⅝	32⅝	65⅛	34¾
5¾	4⅝	5⅛	4⅝	5⅛	Texas Gulf Producing Co.	888,141	N.P.	15c	12-15-38	.15	0.68	0.93	5⅞	2⅝	9⅝	2
10⅛	8¼	8¾	8½	8¾	Texas Pacific Coal & Oil	888,236	$10	10c	3-1-39	.40	1.11	0.72	12½	7	16⅝	5⅜
14⅛	12¼	13⅜	12¾	13	Tide Water Associated	6,369,175	$10	25cQ	3-1-39	1.00	2.08	1.03	15¾	10⅛	21⅝	13⅛
19¾	18¼	19	18½	19	Union Oil of California	4,666,270	$25	30cQ	2-10-39	1.20	2.58	1.40	22½	17⅛	28¼	17½
23⅝	21	22½	22¼	22½	Union Tank Car Co.	1,200,000	N.P.	30cQ	3-1-39	1.30	1.70	1.76	23½	20	31½	22
3⅝	2⅞	3¼	3	3¼	Wilcox Oil & Gas	506,522	$5	....	5-10-28	....	0.24	—0.06	3½	1⅝	6¼	1¾

*Payable in 3½ per cent notes. †Includes extras. ‡One-tenth share $2 preferred stock. §Also 1½ per cent stock dividend. ‖Also right to subscribe to bonds.

New York Curb Exchange

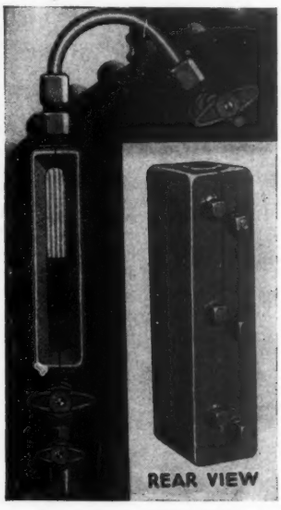
1939 High	1939 Low	Week ending Feb. 25 High	Week ending Feb. 25 Low	Week ending Feb. 25 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1937	Com. sh. earn. 1936	1938 High	1938 Low	1937 High	1937 Low
9	7⅜	8⅞	8	8½	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.10	$0.27	$0.28	11¾	5	10	6⅝
7¼	5⅜	5⅜	5½	5¾	Bridgeport Machine Co.	260,000	N.P.	$1.25	12-30-37	....	1.90	1.26	10¼	4⅞	21⅜	7
30⅜	27¼	..	..	..	Buckeye Pipe Line Co.	200,000	$50	50c	3-15-39	2.00	4.02	4.40	39	22½	51½	36
130	121½	126¼	126	126¼	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-27-39	6.50	6.73	7.46	128	97	12	95½
9¼	6⅝	8⅜	7¾	8⅜	Cities Service (new)	3,714,317	$10	....	6-1-32	....	1.02	0.13	11	5⅛	5⅝	1½
1⅛	1/16	1/16	⅞	1/16	Cosden Petroleum	462,551	$1	....	.....	....	0.19	...	2⅜	⅞	5½	1½
23¾	20¼	22⅝	20¼	20¼	Creole Petroleum	6,975,383	$5	50cSA†	12-15-38	1.00	1.61	1.23	27½	17½	38⅜	20¼
7⅛	6¼	6½	6½	6½	Darby Petroleum	351,390	$5	25cSA	1-15-39	.50	1.36	1.26	10¼	5½	18⅝	6½
2	1¾	1¾	1¾	1¾	Derby Oil & Refining	263,162	N.P.	....	.....	....	1.34	0.66	3½	1½	8⅜	2¼
20	20	..	..	..	Eureka Pipe Line	50,000	$50	50c	2-1-39	3.00	—0.12	—0.62	31	16	47½	24½
40	35⅞	38½	36¾	38	Gulf Oil Corp.	9,076,202	$25	25cQ	12-15-38	1.00	3.51	2.90	46⅞	33	63½	33
69⅝	63	65½	63	63	Humble Oil & Refining	8,987,840	N.P.	62½c	12-27-38	3.00	5.22	3.80	72⅝	56	87	54⅞
17	16	16⅞	16⅝	16¾	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	12-1-38	1.25	0.98	0.95	19½	14⅛	24¼	14½
7	6¼	..	..	..	Indiana Pipe Line	300,000	$10	20c	11-15-38	.50	1.03	1.00	9⅜	6	15	5⅞
27½	24¾	26½	26⅜	26⅜	International Petroleum	14,324,088	N.P.	$1.25†‡	12-1-38	2.50	...	1.81	31¼	21	39½	23½
3¼	2¾	3½	2¾	3¼	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	.10	0.17	0.20	5	2⅛	8¾	2⅜
20¼	17½	18¼	18	18¼	Lion Oil Refining	434,820	N.P.	25cQ	12-15-38	1.00	2.17	1.43	25⅛	15⅝	34	12½
9½	8⅝	9⅜	9⅛	9¼	Lone Star Gas	5,553,747	N.P.	20c	12-22-38	.60	1.14	1.02	10⅜	6⅝	14¼	5¼
7¾	6¾	7¼	6⅞	6⅞	Louisiana Land & Exp.	2,977,449	N.P.	5c spl.	12-23-38	.45	0.58	0.64	9⅜	6½	15¼	6¾
8¾	8⅛	8⅜	8⅛	8¼	Midwest Oil Co.	998,444	$10	50c	12-15-38	1.00	1.14	0.95	9¾	6⅝	14⅝	6¼
5⅜	4⅞	5⅜	5¼	5¼	Mountain Producers	1,593,584	$10	30cSA	12-15-38	.60	0.76	0.62	5¾	4½	7⅞	4⅛
13⅛	12	13⅛	12¾	13⅛	National Fuel Gas	3,810,183	N.P.	25cQ	1-16-39	1.00	0.96	1.19	14⅝	11½	19½	12
8	7¼	8	7¾	8	National Transit	509,000	$12.50	40c	12-15-38	.75	1.19	0.79	9¼	6½	12½	7¼
1¾	1½	1½	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	0.02	0.02	2⅝	1½	5	1⅛
4½	4	4⅜	4⅜	4⅜	New York Transit	100,000	$5	15c	4-15-39	.25	0.49	0.34	4½	3½	5⅜	3⅞
5½	4½	..	..	..	Northern Pipe Line	120,000	$10	15c	12-1-38	.35	0.78	0.66	6	4	12¾	5¾
7⅜	5½	6¼	5¾	6⅛	Pantepec Oil	2,441,142	$1	....	.....	....	...	0.05	7¾	3½	9⅝	2¾
2⅜	1⅞	2	2	2	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	—0.17	0.45	4½	1⅝	12¾	2
3	2⅛	2⅝	2⅝	2⅝	Ryan Consolidated	296,931	N.P.	....	.....	....	0.46	...	4	2⅛	6½	2¼
3¾	3½	3½	3½	3½	Southern Pipe Line	100,000	$10	15cSA	9-1-38	.30	0.85	0.41	5⅝	3¼	7¼	3⅞
34¼	32	33	32½	32¾	South Penn Oil	1,000,000	$25	37½cQ	12-24-38	1.75	4.64	3.59	39	28¾	56	35
19	18½	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	12-28-38	2.00	0.95	0.97	22¼	16½	42	20
18½	17½	18⅜	18⅛	18⅛	Standard Oil of Kentucky	2,604,790	$10	50cQ†	3-15-39	1.25	1.60	1.46	18¾	15	21⅛	14¾
6¾	6	6¼	6	6	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	....	—0.58	0.42	8¾	5½	13¾	8
21¼	19	20	19¾	20	Standard Oil of Ohio	753,740	$25	25c	3-15-39	1.00	3.67	4.77	22¾	16¼	45	16
2⅝	2	2⅜	2⅛	2⅜	Sunray Oil	2,006,176	$1	10c	12-24-37	.05	0.42	0.26	3¼	2	4⅞	2
4	3	3¼	3	3¼	Texon Oil & Land	936,024	$2	15cQ	9-30-38	.60	0.51	0.36	5¼	3½	7⅝	2
5½	4	4¼	4	4	Transwestern Oil Co.	750,000	$10	....	.....	....	0.48	0.06	7⅝	4¼	13⅞	4⅝
3⅜	2¾	2⅞	2¾	2⅞	United Gas Corp.	7,818,959	$1	....	.....	....	0.25	0.20	5¼	2⅝	13⅞	3

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

New or Improved Equipment

New Clamp-Type Reflex Gauge Is Put on Market by Inferno

A new clamp-type reflex gauge made by the Inferno Co., Shreveport, La., is now available to the oil industry at supply stores. Each side of the new gauge is completely housed by one of the two



clamps, which can be removed separately. When installing a new glass, glass and gasket are easily held in exactly the right place while the first clamp is put on and tightened. Pressure from each clamp screw is distributed evenly over the entire area of contact between glass and clamp, so that it is impossible to exert too much pressure on any one screw. The clamps can be removed, a new glass and gasket inserted, and the clamps replaced in an unusually short time.

The new Inferno clamp-type gauge has a wider, heavier glass than is used ordinarily. It lasts longer and is particularly helpful when water conditions are bad.

The new gauge is made in navy bronze or stainless steel. The navy bronze used is classified in the A.S.M.E. code as Composition M. The navy bronze gauge, suitable for ordinary boiler service where corrosive conditions are not severe, is tested to 2,000 pounds. It is recommended for working pressures to 350 pounds and for temperatures to 450° F. The noncorrosive steel gauge, tested to 2,500 pounds, is recommended for working pressures to 1,000 pounds and temperatures to 1,000° F.

Here and There With Men Who Manufacture Equipment

American Chain & Cable Co., Inc., has appointed R. E. Greenwood district sales manager of the Chicago territory of the American Chain Division, with headquarters at 400 West Madison Street, Chicago. He succeeds G. B. Kutz who was transferred to York, Pa., as assistant to the general manager of sales, American Chain Division. R. C. Brenizer has been appointed Philadelphia district sales manager of the division, with headquarters at Second and Diamond streets, succeeding R. E. Greenwood, transferred to Chicago.

Keith C. Bowers, formerly on the staff of Revere Copper & Brass, Inc., in St. Louis, Mo., has been appointed sales representative in western Missouri and Kansas. His headquarters will be at 325 Ward Parkway, Kansas City, Mo.

Edwin L. Dennis, for 12 years chief engineer and consultant for Godchaux Sugars, Inc., New Orleans, La., and before that power engineer at the Ardis works of the Texas Co. in Shreveport, La., is now with Coppus Engineering Corp., of Worcester, Mass., as chief combustion engineer. Mr. Dennis is the inventor of the Coppus-Dennis Fanmix rotary gas burner manufactured by Coppus.

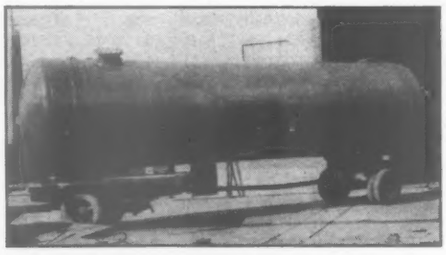
William H. Fogarty, for 30 years with Johns-Manville in the company's Chicago office, has been promoted from manager of the power products department in the Chicago district to assistant to the vice president of the J-M Sales Corp. In his new position, Mr. Fogarty will continue to make his headquarters in Chicago, where he has been for 27 years. He is succeeded by Corydon H. Hall, who has been assistant sales manager in the New York power products district.

E. B. Hearn, associated with Lane-Wells Co. in Houston, Tex., for the past two years, has been transferred to Tulsa as Mid-Continent division sales engineer and has moved his family to the latter city.

Warner Lewis Co., 230 East Third Street, Tulsa, has been appointed a service branch for the Wayne Pump Co. Parts will be carried for all models of Wayne visible, meter, and computor pumps.

All-Welded Pressure Vessel Is Fabricated for Oil Refiner

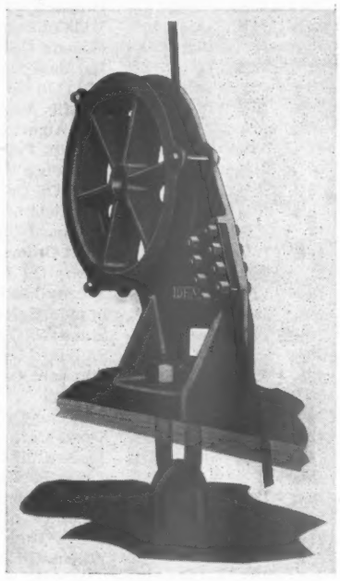
The Ben Sibbitt Iron & Foundry Co., of Wichita, Kans., has completed fabrication, by electric arc-welding, of the first of several large pressure vessels for a western petroleum refinery. This particular vessel is 35 feet long; 7 feet 6 inches in diameter, and was fabricated of three-eighths inch flange-quality steel plate. The heads were constructed of half-inch steel plate of the same quality. All seams were butt welded. Actual welding operations were done with General Electric Co. 300-ampere welding equipment and Type W22E electrodes. Welding operators were qualified for all-position welding by the Kansas State Highway department.



After fabrication the vessel was given a hydrostatic test with water at a pressure of 150 pounds per square inch and 60° F. With this pressure on the vessel, it was hit sharply, on each side of each seam, at 6-inch intervals, with a 3-pound hard brass hammer. The vessel was then checked under A.P.I.-A.S.M.E. specifications and it showed no signs of leaks or sweats.

Tie-Down Attachment Anchors Dead End of Drilling-Line

The Ideal dead-end tie-down attachment is a line-saving device recently developed by the National Supply Co. to meet the need for a safe and



economical means of anchoring the dead end of the drilling-line in the derrick. It is said to have proven satisfactory in doing away with damage to the line, such as that caused by sharp bends and numerous small clamps used at the anchorage.

The end of the wire line is given 2 or 3 turns around the 24-inch diameter cast-steel durm and held securely with the bronze form-fitting clamp. This gives a coil-brake effect, with the result that only a fraction of the full line tension is transmitted to the clamp. The surplus line remains on the spool or storage reel in the usual manner. By simply loosening the clamp-bolts the line can be pulled through the clamp in either direction without removing it from the drum.

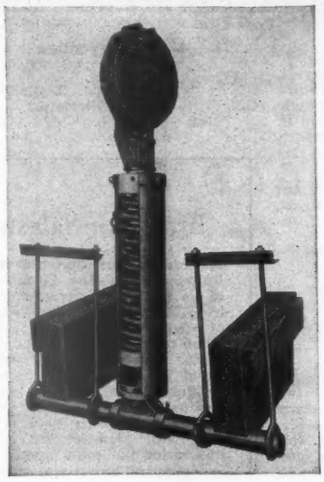
The tie-down attachment can be secured to the derrick sills in a number of ways. Holes are provided for using a large U-bolt, or a piece of wire rope can be used to hold the attachment. Bulletin No. 185 is sent on request.

Copeland Heads Sullivan Company

The Sullivan Machinery Co., Michigan City, Ind., has elected Frederick W. Copeland president. Mr. Copeland, who resigned the presidency of the H. Channon Co., Chicago, to take over his new duties, joined the Sullivan Machinery Co. in 1913. He worked successfully as apprentice in each plant, serviceman in the mines, salesman, export manager, vice president and controller. He has been a director since 1923. In 1934 he left to become president of the Channon organization. His father, the late Frederick K. Copeland, was Sullivan's president from 1892 to 1928, during which period the company grew from a capitalization of $275,000, one sales office and one small factory, to an approximate capitalization of $10,000,000, 31 branch offices and two plants occupying 1,036,000 square feet.

Faster and Deeper Spudding Is Done With Shock-Absorber

The new P-G shock-absorber, announced by the New Deal Specialty Co., Okmulgee, Okla., for all types of cable-tool drilling equipment, is adapted to



cable-tool derricks, drilling machines and spudders and permits deeper and faster spudding and spudding with wire line. It is claimed the unit increases the stroke while reducing the strain and jar on wire line, derrick and drilling machine.

The shock-absorber is designed to give wire jerk lines the efficiency of manila rope. It follows the wire line up and down the bullwheel, and follows the drilling cable on the shaft through a self-aligning feature. There are no braces. Holdback chains hold the shock-absorber in upright position. No holes have to be drilled in sills on the derrick or drilling machine.

Barnes Joins Bethlehem

H. A. Barnes, for more than eight years sales engineer for Parkersburg Rig & Reel Co., has joined the sales force of Bethlehem - International Supply Co., it is announced by G. A. Thompson, executive vice president of Bethlehem. In his new post Mr. Barnes will be in charge of production and pumping equipment sales in Tulsa, Bartlesville, and Ponca City, Okla. His office has been in Tulsa since 1932, with the result that he has a wide acquaintance among oil men in the territory which he will serve in his new connection.

Bulletins, Booklets, and Other Literature for the Trade

"Molybdenum Steels in Oil Production" is the title of a 32-page illustrated booklet obtainable from Climax Molybdenum Co., 500 Fifth Avenue, New York.

Lane-Wells gun-perforator service is explained, with illustrations, in a 24-page booklet offered by Lane-Wells Co., Los Angeles, Calif.

Two new bulletins have been issued by the Oil Well Supply Co., one on the Type 38 casing-head and one on the No. 14-P power-driven slush-pump.

A. M. Byers Co., Pittsburgh, Pa., has issued a complete revision of its bulletin on the welding of wrought iron. This 16-page booklet, sent on request, takes the place of the first edition, published in 1934.

Three bulletins have been released by the Buda Co., Harvey, Ill.: No. 938-A, on oil-field jacks; No. 946, on hydraulic jacks, and one entitled "The Answer to a Worldwide Need," covering the Buda Diesel conversion unit package for Ford trucks.

How weight and bulk are cut in a high-pressure pump designed and constructed by Halliburton Oil Well Cementing Co., Duncan, Okla., is told in the current number of Nickel Steel Topics, published by the International Nickel Co., Inc., 67 Wall Street, New York.

Glyco Products Co., Inc., 148 Lafayette Street, New York, announces the latest edition of "Chemicals by Glyco," which contains a complete index of products, formulae, and uses, making easy to find any particular piece of information. New products are described in addition to the line of esters, emulsifying agents, synthetic waxes, resins, etc.

An illustrated bulletin No. 1195 on squirrel-cage induction motors has been released by the Allis-Chalmers Manufacturing Co., Milwaukee, Wis. Several pages are devoted to case studies of "Lo-Maintenance" motors operated under adverse conditions.

The latest issue of International Power, published by the International Harvester Organization, 180 North Michigan Avenue, Chicago, contains an interesting article on how a 4-engine drilling rig saves money.

Value of Patent Recognized

In April, 1938, a company in Germany called the Gesellschaft fur Nautische und Tiefbohrtechnische Instrumente m.b.H. filed a petition in Berlin to have one of the Schlumberger patents nullified. This patent, No. 592351, corresponds to the U. S. Patent 1913293, covering the basic principles of porosity measurements. Proceedings before the Reichspatentamt lasted the rest of the year and a decision was reached on December 22 recognizing the full value of the Schlumberger patent in question.

Hake Represents Globe Oil Tools

H. W. Hake, of Hake Tool Co., 1121 Rothwell Street, Houston, Tex., announces appointment of his company as distributor in the Mid-Continent, Gulf Coast and tributary oil fields, of the entire line of oil-field products manufactured by Globe Oil Tools Co., Los Nietos, Calif. Globe Oil Tools Co. succeeded the original H. C. Smith Co., Wieman-Kammerer-Wright (W-K-W) Co., and National Tool & Metals Co., all of southern California, several years ago, and since has supplied its products to oil companies in all parts of the world. The present line of Globe tools consists of rock-bits, box- and pin-type drilling bits, W-K-W drilling-bits, basket bits, redrill bits, underreamers, rotary core barrels, and other drilling and reaming tools.

Mr. Hake plans a tour of Oklahoma, Texas, Arkansas, Louisiana, Kansas, Illinois, Kentucky and Indiana to make personal contacts with operators in those fields, returning in time to arrange his company's exhibit at the Oil-World exposition to be held in Houston April 24 to 29.

Device for Swinging Tongs and Tong-Lines Offered by Weco

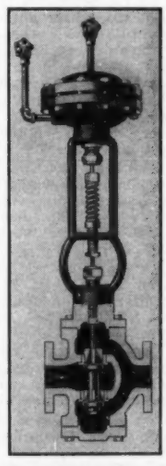
The Well Equipment Manufacturing Corp., Houston, Tex., has introduced the new Weco tong-line block, designed for use in swinging tong-

lines and tongs in the derrick. This is a heavy-pattern block with an iron sheave, having a drop side with a latch lock.

The sheave is bronze-bushed and is mounted on a three-quarters inch pin. Either five-eighths or nine-sixteenths inch line may be used. The rope will not work out under loads, regardless of the block's position, the manufacturers say.

New Relief Type of Governor Is Placed on Market by Fisher

A new and improved by-pass or relief type of governor has been placed on the market by the Fisher Governor Co., Marshalltown, Iowa. According to P. A. Elfers, sales manager, this Type 445 governor is especially designed to maintain the differential pressure setting of the system by relieving excess pressure in the discharge back to the suction side. It is installed in the line connecting the discharge of the pump with the suction. It is suitable for differential pressures ranging from 10 to 100 pounds per square inch and for working pressures up to 1,000 pounds, 100° F. Type 445 is spring-controlled and is said to have proved especially suitable for installation in vertical pipe lines. The long calibrated steel spring which opposes the differential pressure on the diaphragm gives easy throttling control over boiler feed pumps.



Other features include full-capacity valves, globe bodies that can be readily inverted; deep-gland stuffing-box guides for stem that eliminate friction and needle valves in the control pipe. The balanced inner valve has beveled ground seats and is connected to the valve stem by Fisher's patented "Flexaline" connection. This is designed to insure positive seating without binding or friction and makes possible more sensitive control. Catalog B describes the governor in detail.

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Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

DRILLING deals wanted 50,000 acres Southern Illinois in and around production area. Elmer Gant, Anna, Illinois.

ILLINOIS 60,000 acres in and near production. Illinois Minerals Company, Cairo, Illinois.

SACRIFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title. P. O. Box 191, Clovis, N. Mex.

320 ACRES, Crane Co., Tex., Magnolia lease, cheap in fee. Address 415 Littlefield Building, Austin, Texas.

OIL and Gas Lease For Sale. My one-half interest in 204 A. Sec. 7. 4N. 6W. Grady Co., Okla. Also, 240 A. Sec. 14 and 15, 2N. 4W. Stephens Co., Okla. E. E. McDowell, Verden, Oklahoma.

5 ACRE Mineral Deed, Landowners Royalty under entire 80 acres of land leased to Gulf Oil Co. being N½ NW¼ sec. 30, twp. 14s, rge. 31e, full price only $32.50. Perpetual and full participating. Send your check. Guarantee delivery. P. O. Box 968, Hobbs. N. Mex.

NATURAL GAS: Offers good returns on your investment; shallow drilling. Good market. Low operating expense. Proven territory. H. W. Mitchell, 411 Pacific, Osawatomie, Kansas.

FOR SALE: 1200 Acre Illinois block of leases along known structure, 7 miles south of production. Address
Box J-862
The Oil and Gas Journal, Tulsa, Okla.

OIL IN THE FOREST CITY BASIN
200 of these books free. Request your copy on your letter head. 85,000 acres under lease offered in blocks for drilling agreements. NEKOLEXAS, Box 435, Lawrence, Kansas.

ALLEN CO., KY., SHALLOW FIELD. See or write C. L. Raines, Scottsville, Ky., regarding producing leases and drilling blocks in Allen County oil field.

25,000 Acres, Carlisle, Ballard, and Hickman Counties, Western Kentucky. Drilling Deals wanted. Box #84, Bardwell, Ky.

FOR LEASING
The NW¼, the SW¼ of Sec. 16 and all of Sec. 15 (excepting E½ of SE¼) all in Township 10, Range 22, Graham County, Kansas. A. A. Andreen, Woodhull, Illinois.

I HAVE 160 acres, abstract 1215 and west 40 in abstract 1728, to lease 5 years, and half of royalty, $30 A. Southeast Bryson, half mile from production. H. A. Bryson, Bryson, Texas.

LEASES Callahan County, Texas—Full ⅞ five year term dollar rentals, around drilling well. Shallow area. Good geology. Semi-proven. $20 per acre. Address Drilling Contractor, Box 1135, Dallas, Texas.

Forest City Basin, Kans. & Mo. Leases, 40 acre tracts and drilling blocks. Margaret Haynes, R #3, N. Topeka, Kansas.

MISSOURI LEASES—Dollar per acre. Will drill for half interest. W. Plagens, Gen. Del., St. Joseph, Mo.

Leases and Drilling Blocks

HOT SPOT LEASES
North Mo. $1.50 acre up. Some mile of well. Box 152, Milan, Missouri.

SW Michigan 5000 acre block, well located, will sell or consider drilling propositions. R. Remington, Plainwell, Mich.

ONE-HALF interest in drilling well to shale gas and lease including equipment in to pipe line, $1,200.00. Near Cane well. Pipe line on lease. Market 10c per M. Offer made to citizens of Oklahoma. LAURENCE PRICE, Coweta, Oklahoma.

Legal Blanks

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REFINERY Operator and Chemist desires location. Experience in still operation, cracking, lube mfg., treating, etc. Management experience. Address Box J-852, The Oil and Gas Journal, Tulsa, Oklahoma.

GRADUATE PETROLEUM ENGINEER—14 years' experience in production and geological work. Several years in supervisory capacities. Supervision of drilling and development a specialty. Desire connection with reliable firm. References if needed. Address Box J-882, The Oil and Gas Journal, Tulsa, Oklahoma.

DESIRE connection with company or individual developing oil property, operation or installation of natural gas plant as employee or partner. Graduate engineer, 2t years' operating experience, 4 years with state service Comm. Address Box J-832 The Oil and Gas Journal, Tulsa, Okla.

Petroleum geologist, employed at present, desires position with increased responsibilities, exp. seismic, magnetic geophysical methods. Single, in good health, consider foreign service. Address Box J-890, The Oil and Gas Journal, Tulsa, Okla.

Situations Wanted

Young man, 38, good health, married, 18 years' drilling exp. on cable and rotary tools, desires position requiring combination work. Position accepted anywhere in United States or Canada. Excellent references. Address Box J-891, The Oil and Gas Journal, Tulsa, Oklahoma.

PET. Engr., married. Some experience with oil companies in Mid-Continent fields. Address Box J-871, The Oil and Gas Journal, Tulsa, Oklahoma.

POSITION WANTED
Development and research engineer, chemical engineer, training, exp. in thermal decomposition of hydrocarbons and polymerization processes. Address Box J-892, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

ORGANIC CHEMIST of ability preferably with doctorate, with experience along following lines desirable but not essential: Manufacture of ethylene glycol, formaldehyde, etc. from petroleum or natural gas, catalysis as related to polymerization or cracking by hydrocarbons for research and development work in the Middle West. An opportunity for a capable man. Give details of education, experience, age, nationality, salary. Address Box J-881, The Oil and Gas Journal, Tulsa, Oklahoma.

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Fair Bldg. Fort Worth, Tex.

WEST TEXAS HANDY OIL MAPS
Complete coverage on all West Texas Fields, showing operators, farm names, total depths and exact well locations. $10 per month. Individual maps 50 cents each. Box 2519, Tulsa, Oklahoma.

Oil Industry Printing

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Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

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Registered Dealers Only.
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PRODUCING OIL ROYALTIES
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ROYALTIES PURCHASING TRUST, LTD., Moorgate Hall, Moorgate London E. C. 2., England, are buyers of producing oil royalties.

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OIL FINDING DOWSING METHOD
My deductions a practical method which picks up vibratory reactions emanating from carbo-hydrates. Physico method finds oil, locates faults. Same method discovered great East Texas field also our Watson #2 first producer Wilmington, Calif. field. Employ a man that owns producing wells. I find oil if it exists or no charge. George Miller, 1548 Post, Torrance, California.

Contractors

NORTHWEST Missouri—We have light modern, all-steel, truck mounted spudders for shallow information holes to marker limes in Forest City basin. Drillers familiar with formations. Office close to area. Also have spudders for deep wild cat holes. References. J. D. Judd & Son. Martin City, Mo. 6 miles south of Kansas City on Holmes St. Phone Dwight 3273.

WE will contract your Ditching and Bulldozer work. Also have Pipe Line Equipment for rent or sale. Kova Pipe Line Co., 503 Tradesmen Bldg., Oklahoma City, Okla.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

COMPLETE REFINERY

—All or Any Part—

Two 253 h.p. Heine Straight Tube Boilers A.S. &M.E. 200 lbs. pressure. Complete with oil and gas burners. In service less than eight months.

Complete 6,000 bbl. Winkler-Koch pipe still with Winkler-Koch distillation bubble tower 8'6" diameter by 78' high.

One Burrel-Mase fractionator Type E-48-20 Series 600-48, 4' diameter by 51'6" high. 20 trays with bolted manhole on each tray, with separate reboiler and connecting piping.

Complete inventory furnished on request

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Robt. W. Duden, 2100 S. Union, Tulsa, Oklahoma

Steam Equipment For Sale

4—125 H. P. 200 W.P. Broderick Boilers.

1—125 H. P. 325 W.P. Broderick Boiler.

4—125 H. P. 300 W. P. Broderick Boilers.

1—20" Gardner Denver Steam Pump.

2—18" Lucey Steam Pumps.

2—18" Wilson Snyder Steam Pumps.

2—12 x 12 Johnson Drilling Engines.

1—12 x 12 Ideal Drilling Engine.

1—6" Unitized Johnson Draw Works.

1—7⅛" Unitized R. B. Union Tool Draw Works.

1—6" T. I. VV. Draw Works Steel Jack Posts.

3800' 4½" Grade "D" Seamless 16.60# A. P. I. Drill Pipe.

6700' 3½" Grade "D" Seamless 13.30# Drill Pipe Hughes Acme Tool Joints.

We also have Rotary crown blocks, traveling blocks, hooks, swivels, etc. Bargains Only. Terms.

Melton Supply Co.

Seminole, Okla.

FOR SALE at Bartlesville: 1—2A National Drilling Machine, I. T. I. O., Bartlesville, Oklahoma.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO. 26 West 2nd St. Cincinnati, Ohio

FOR SALE—Approximately 10 miles each of No. 10 galvanized and No. 10 copper telephone wire. I. T. I. O., Bartlesville, Okla.

FOR SALE—IMMEDIATE DELIVERY COMBINATION ROTARY AND CABLE TOOL RIG DEMONSTRATOR—NEW MACHINE GUARANTEE.

Factory Reconditioned

Drilled only four 3,000-ft. rotary holes in Illinois Basin for major oil company.

BRIEF SPECIFICATIONS

Capacity 3,500'-4,000'-4½" drill pipe. Skid mounted—for use under standard rig derrick. Diesel engine—Hercules 6-cyl.-160 H.P. Rotary table—National-20". Drawworks—2-speed and reverse—gear driven. Twin Disc clutches. Cat heads—dual. Sand and calf reel—two-speed and reverse. All gears cast steel—cut teeth. All principal shafts hammer forged, with anti-friction bearings. Reverse gear—fully enclosed—running in oil. Derrick—56' telescopic with dual rubber shock absorbers and braces can be furnished if desired. Bucyrus-Erie high quality material and workmanship throughout. Approximate weight without rotary table 32,000 lbs. For price and further information wire, phone or write

BUCYRUS-ERIE COMPANY

(Att'n. H. C. Neely) Evansville, Indiana or South Milwaukee, Wis.

FOR SALE: At our Oklahoma City Warehouse Model D48 Muskogee Iron Works long line well servicing unit powered by HXE Hercules engines mounted on No. 55 truck. I.T.I.O., Bartlesville, Oklahoma.

230 H. P. Cooper Bessemer Compressors, Power cylinders 17 x 20 Compressor cylinders 6¼x12½x20, 1000 pounds on high stage or will convert into compressors suitable for high pressure recycling. These compressors are in first class condition. Box 59, Seminole, Oklahoma.

FOR SALE: One complete steam rotary rig with 4" drill pipe, 90 H.P. Broderick Boilers completely equipped and in shape to drill immediately. Located on the Tucker lease out of Haven, Kansas. For further information contact the Viking Drilling Company, c/o Yingling Chevrolet Company, Wichita, Kansas.

FOR SALE—Steel riveted smoke stack. Self supporting. Diameter 9 feet, height 126 feet. Like new. Can ship on day's notice.

High and low pressure refinery valves. Standard makes. Sizes ¾ inch to and including six inch. Subject to test inspection. Harvey Bros., 706 Rudd, Canon City, Colorado.

Always Ready to Help You

You can acquaint thousands of oil men with your particular want or service through an advertisement in this section of The Oil and Gas Journal.

The interested readers respectfully consider the merits of every advertisement in the Classified Columns because they are always in the market for good deals.

Your lease, royalty, production, equipment or service would appeal to some of them.

Mail your advertisement now for next week's issue so that these men can make a deal with you.

CLASSIFIED DEPARTMENT

The Oil and Gas Journal

TULSA, OKLAHOMA

FOR SALE 45 Star Spudder Complete with tools and equipment, 13 inch down to 6⅝ inch. Also 60 Caterpillar tractor. J. L. Gardenhire, Centralia, Illinois.

FOR SALE: Used large capacity positive and orifice gas meters. Geo. R. Milner, Okmulgee, Oklahoma.

Oil Well 18' Power and Idler. 40 H.P. Black Bear Gas Engine Belts, Metal Buildings and Circulating Tank. A-1 condition. Priced for quick sale.

DAVE MORGAN OIL COMPANY
P. O. Box 549
Blackwell, Oklahoma.

Pumping Unit—Lee C. Moore #9731, 6000 lb. Polished Rod Capacity. Complete with Engine, 1950 lbs. Counterweights, for 2000' well. Practically new. Also 1550'—5½" O.D., 17 lb., Seamless Csg. in A-1 condition. Complete set 2" tubing tools, conections, complete ¾" Rod Tools, etc. Mutual Investments, Inc., 1106 Hales Building, Oklahoma City, Oklahoma.

2—Buda heavy duty 6 cyl. Power Units, with radiator, fan, etc. Model JH-6, 6x7¼". 80 to 155 HP. Operate on Gas, Gasoline, Butane, or 38/40 Distillate. Completely overhauled. Immediate shipment from stock. Make excellent drilling rigs.
MISSISSIPPI VALLEY EQUIPMENT CO., Chamber of Commerce Bldg., St. Louis, Mo.

Diesels 25 to 1200 HP For Sale and Wanted

TRACTORS

Government crawler type Caterpillars, 5 ton $375, 10 ton $695. Slightly used. Perfect condition.

O. C. EVANS
Mt. Sterling, Ky.

BUDA MOTOR

90 H.P. Like new, only $275.
R. D. JAMESON, La Cygne, Kansas.

FOR SALE

Rotary Rig—6" Johnson Draw Works. Two mud Hog Pumps, 65 Boiler, 12X12 Ajax Engine, 3000 ft. good 4" drill pipe with tool joints and other equipment to complete rig. Also 88 ft. steel derrick. All for $4000.00 Cash.

BOB STONER
1170 Peabody, Memphis, Tenn.

Equipment Wanted

USED TRANSITS WANTED

No junk, antiquated, or worn-out instruments wanted—must be permissible to repair to shape like new. Write full particulars to

P. O. BOX 6005, Houston, Tex.

CASH FOR IDLE STORAGE

We will buy at any location steel storage tanks. Send full information and location to—

P.O. Box 168, Tulsa, Okla.

Business Opportunities

Desirable water front bulk plant, Westchester County, adjacent Long Island Sound, storage tanks, garages, office, warehouse, long lease, reasonable rental. Address Box J-886, The Oil and Gas Journal, Tulsa, Oklahoma.

Wanted

WANTED—To buy casinghead gasoline plant now operating and producing from ten to twenty thousand gallons per day. Prefer Arkansas, Louisiana, or South Texas. Give specifications of equipment, location, and price. Address L. RUDMAN, Box 2018, Tyler, Texas.

IF YOU buy or sell royalties, leases or production, DON'T FAIL to check each item listed in these classified columns. They comprise the best medium of exchange available to you.

Classified Department

LEASING ACT

(Continued from Page 17)

However, it is stated that hardly a single well on wildcat acreage has been drilled under the restrictive terms since the amendment went into effect. Many of the major companies, who have ample oil reserves for present needs were, however, able to take care of these obligations and their houses, mostly, are in order. It was the little fellow who feels the situation the keenest.

The fight to bring about an adjustment of present difficulties is well under way. The Independent Petroleum Association of America at Tulsa on October 21, 1938, adopted a resolution declaring the oil and gas leases on the public domain are not on a parity as to terms and conditions with similar leases throughout the industry and urging that the present royalties required by the Government be reduced to the customary one-eighth. It also recommended that local conditions be taken into consideration and that the regulations shall not be needlessly drastic.

A joint memorial to Congress was adopted in the Wyoming Legislature by a unanimous vote of the Senate and a 32 to 12 vote in the House, petitioning Congress to immediately and favorably consider and act upon the two bills now pending. These are House Bill 2662 and House Bill 2663, introduced by Congressman Frank O. Horton, of Wyoming. One proposes the extension of certain oil and gas prospecting permits for a year from December 31, 1938, and the other sets a maximum royalty of not more than 12½ per cent, and rentals at 10 cents per acre, waiving any rentals for the first two years. Petitions to congressional delegations from the western public land states are being extensively signed and forwarded to Washington. More than 4,000 names were promptly added to the first lists put out in Wyoming. Legislatures in Colorado, Montana, Utah and New Mexico also are being petitioned to memorialize Congress and petitions are being circulated in all of these states.

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Zink Burners, John .....

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